Spec Sheet

Cisco UCS B200 M3 Blade Server

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OVERVIEW

Delivering performance, versatility and density without compromise, the Cisco UCS B200 M3 Blade Server addresses the broadest set of workloads, from IT and web infrastructure through distributed database.

The enterprise-class Cisco UCS B200 M3 blade server extends the capabilities of Cisco's Unified Computing System portfolio in a half-width blade form factor. The Cisco UCS B200 M3 harnesses the power of the latest Intel® Xeon® E5-2600 v2 and E5-2600 series processor family CPUs with up to 768 GB of RAM (using 32 GB DIMMs), 2 drives, and up to 80 Gbs throughput connectivity.

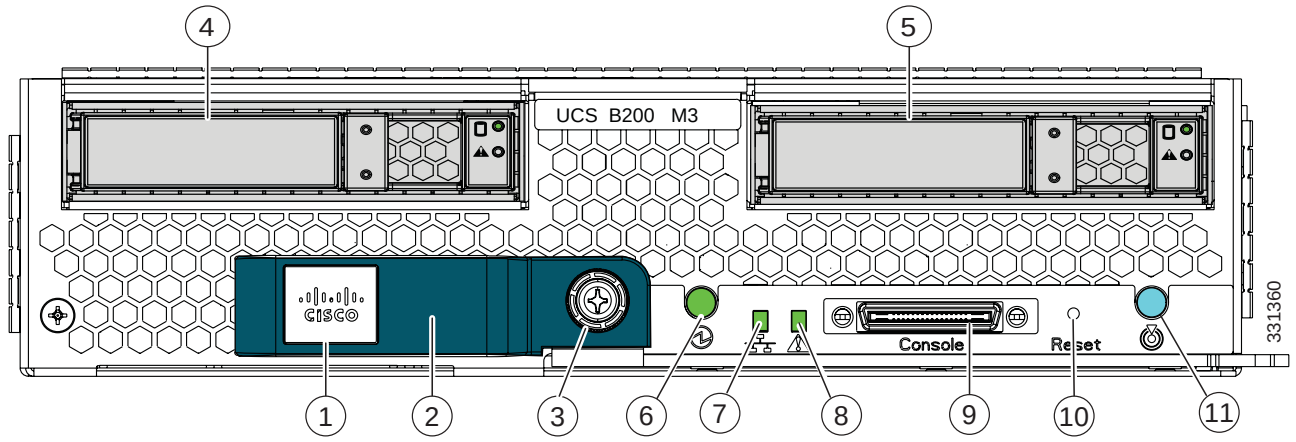
Figure 1 Cisco UCS B200 M3 Blade Server

DETAILED VIEWS

Blade Server Front View

Figure 2 is a detailed front view of the Cisco UCS B200 M3 Blade Server.

Figure 2 Blade Server Front View



S

1	Asset pull handle (a blank asset tag is provided on which you can add your own label or sticker or you can use a marker to write your asset information on the tag)	**7**	Network link status LED
2	Blade ejector handle	**8**	Blade health LED
3	Ejector captive screw	**9**	Console connector[1]
4	Drive bay 1	**10**	Reset button access
5	Drive bay 2	**11**	Beaconing LED and button
6	Power button and LED	**—**	—

Notes...

1. For information about the KVM local I/O cable that plugs into the console connector (a cable is included with every Cisco UCS 5100 Series blade server chassis accessory kit), see *ORDER OPTIONAL KVM LOCAL I/O CABLE* on page 36*.

BASE SERVER STANDARD CAPABILITIES and FEATURES

Table 1 lists the capabilities and features of the base server. Details about how to configure the server for a particular feature or capability (for example, number of processors, disk drives, or amount of memory) are provided in *CONFIGURING the SERVER on page 7*.

NOTE: NOTE: The B200 M3 blade server requires UCS Manager (UCSM) to operate as part of the UCS system.

- The B200 M3 with E5-2600 CPUs requires UCSM 2.0.2(q) or later
- The B200 M3 with E5-2600 v2 CPUs requires UCSM 2.1.3 or later

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	The UCS B200 M3 Blade Server mounts in a Cisco UCS 5100 series blade server chassis
CPU	One or two Intel® E5-2600 v2 or E5-2600 series processor family CPUs
Chipset	Intel® C600 series chipset
Memory	24 total slots for registered ECC DIMMs for up to 768 GB total memory capacity (B200 M3 configured with 2 CPUs using 32 GB DIMMs)
I/O	Mezzanine adapters: ■ One connector for Cisco's VIC 1340 or 1240 adapter, which provides Ethernet and Fibre Channel over Ethernet (FCoE) ■ One connector for various types of Cisco adapters, Emulex or QLogic adapters, and Cisco UCS Storage Accelerator adapters.
Storage controller	LSI Logic SAS 2004 integrated controller ■ SAS/SATA support ■ RAID 0 and 1 **NOTE:** The integrated RAID controller does not implement a write cache. However, servers with two HDDs and RAID controllers with cache lack the ability to match the performance of RAID'ed SSD without cache, which can be configured with this server.
Internal storage devices	Up to two optional, front-accessible, hot-swappable 2.5-inch small form factor (SFF) SAS or SATA solid-state disks (SSDs) or hard disk drives (HDDs). An internal USB 2.0 port is also supported. A 4 GB USB 2.0 device is available from Cisco.

Table 1 Capabilities and Features *(continued)*

Capability/Feature	Description
Video	The Cisco Integrated Management Controller (CIMC) provides video: ■ Matrox G200e video controller ■ Integrated 2D graphics core with hardware acceleration ■ Supports all display resolutions up to 1920 x 1200 x 16 bpp resolution at 60 Hz ■ 24-bit color depth for all resolutions less than 1600x1200 ■ Up to 256 MB video memory
Interfaces	■ Front panel • One console connector (see ***ORDER OPTIONAL KVM LOCAL I/O CABLE* on page 36***)
Power subsystem	Integrated in the Cisco UCS 5100 series blade server chassis
Fans	Integrated in the Cisco UCS 5100 series blade server chassis
Integrated management processor	The built-in Cisco Integrated Management Controller (CIMC) GUI or CLI interface enables you to monitor the server inventory, health, and system event logs.
Cisco UCS Diagnostics for Cisco UCS B-Series Blade Servers	The Cisco UCS Blade Server Diagnostics tool for Cisco UCS Blade Servers enables you to verify the health of the hardware components on your servers. The diagnostics tool provides a variety of tests to exercise and stress the various hardware subsystems on the Cisco UCS Blade Servers, such as memory and CPU. You can use the tool to run a sanity check on the state of your Cisco UCS Blade Servers after you fix or replace a hardware component. You can also use this tool to run comprehensive burn-in tests before you deploy a new Cisco UCS Blade Server in your production environment. See the following links for more information: User Guide: ***http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/sw/ucs_diagnostics/b_UCS_Blade_Server_Diagnostics_User_Guide.html*** ISO Download: ***http://www.cisco.com/cisco/software/navigator.html***

CONFIGURING the SERVER

Follow these steps to configure the Cisco UCS B200 M3 Blade Server:

- *STEP 1 VERIFY SERVER SKU, page 8*
- *STEP 2 CHOOSE CPU(S), page 9*
- *STEP 3 CHOOSE MEMORY, page 12*
- *STEP 4 CHOOSE HARD DISK DRIVES or SOLID STATE DRIVES (OPTIONAL), page 18*
- *STEP 5 CHOOSE ADAPTERS, page 20*
- *STEP 6 ORDER A TRUSTED PLATFORM MODULE, page 24*
- *STEP 7 ORDER CISCO FLEXIBLE FLASH SECURE DIGITAL CARDS, page 25*
- *STEP 8 ORDER OPTIONAL INTERNAL USB 2.0 DRIVE, page 26*
- *STEP 9 CHOOSE OPERATING SYSTEM AND VALUE-ADDED SOFTWARE, page 27*
- *STEP 10 CHOOSE OPERATING SYSTEM MEDIA KIT, page 30*
- *STEP 11 CHOOSE SERVICE and SUPPORT LEVEL, page 31*

STEP 1 VERIFY SERVER SKU

Verify the product ID (PID) of the server as shown in ***Table 2***.

Table 2 PID of the Base UCS B200 M3 Blade Server

Product ID (PID)	Description
UCSB-B200-M3	UCS B200 M3 Blade Server w/o CPU, memory, HDD, VIC 1340 or 1240 adapter, or mezzanine adapters

The base Cisco UCS B200 M3 blade server does not include the following components. They must be selected during product ordering:

- CPUs
- Memory
- Disk drives
- Cisco adapters (such as the VIC 1340, VIC 1240, VIC 1380, VIC 1280, and Port Expander)
- Emulex and QLogic network adapters
- Cisco UCS Storage Accelerators (such as the Fusion-io and LSI Logic adapter)

NOTE: Use the steps on the following pages to order servers with the configurable components that you want configured in your servers.

STEP 2 CHOOSE CPU(S)

The standard CPU features are:

- Intel Xeon E5-2600 v2 and E5-2600 series processor family CPUs. See the following link for instructions on how to upgrade your server from Intel Xeon E5-2600 to Intel Xeon E5-2600 v2 CPUs as well as how to upgrade to 1866-MHz DIMMs (supported on E5-2600 v2 CPUs):

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/CPU/IVB/install/IVB-B.html

- Intel C600 series chipset
- Cache size of up to 30 MB for E5-2600 v2 CPUs or 20 MB for E5-2600 CPUs

Select CPUs

The available CPUs are listed in ***Table 3***.

Table 3 Supported Intel CPUs: E5-2600 v2 and E5-2600 Series Processor Family CPUs

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	QPI	Highest DDR3 DIMM Clock Support (MHz)[1]
Intel Xeon E5-2600 v2							
UCS-CPU-E52697B	E5-2697 v2	2.70	130W	30	12	8 GT/s	1866
UCS-CPU-E52695B	E5-2695 v2	2.40	115	30	12	8 GT/s	1866
UCS-CPU-E52690B	E5-2690 v2	3.00	130	25	10	8 GT/s	1866
UCS-CPU-E52680B	E5-2680 v2	2.80	115	25	10	8 GT/s	1866
UCS-CPU-E52670B	E5-2670 v2	2.50	115	25	10	8 GT/s	1866
UCS-CPU-E52667B	E5-2667 v2	3.30	130	25	8	8 GT/s	1866
UCS-CPU-E52660B	E5-2660 v2	2.20	95	25	10	8 GT/s	1866
UCS-CPU-E52658B	E5-2658 v2	2.40	95	25	10	8 GT/s	1866
UCS-CPU-E52650B	E5-2650 v2	2.60	95	20	8	8 GT/s	1866
UCS-CPU-E52640B	E5-2640 v2	2.00	95	20	8	7.2 GT/s	1600
UCS-CPU-E52637B	E5-2637 v2	3.50	130	15	4	8 GT/s	1866
UCS-CPU-E52630B	E5-2630 v2	2.60	80	15	6	7.2 GT/s	1600
UCS-CPU-E52620B	E5-2620 v2	2.10	80	15	6	7.2 GT/s	1600
UCS-CPU-E52643B	E5-2643 v2	3.50	130	25	6	8 GT/s	1866
UCS-CPU-E52650LB	E5-2650L v2	1.70	70	25	10	8 GT/s	1600
UCS-CPU-E52630LB	E5-2630L v2	2.40	60	15	6	7.2 GT/s	1600
UCS-CPU-E52609B	E5-2609 v2	2.50	80	10	4	6.4 GT/s	1333

Table 3 Supported Intel CPUs: E5-2600 v2 and E5-2600 Series Processor Family CPUs *(continued)*

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	QPI	Highest DDR3 DIMM Clock Support (MHz)[1]
Intel Xeon E5-2600[2]							
UCS-CPU-E5-2690	E5-2690	2.90	135	20	8	8 GT/s	1600
UCS-CPU-E5-2680	E5-2680	2.70	130	20	8	8 GT/s	1600
UCS-CPU-E5-2670	E5-2670	2.60	115	20	8	8 GT/s	1600
UCS-CPU-E5-2667	E5-2667	2.90	130	15	6	8 GT/s	1600
UCS-CPU-E5-2665	E5-2665	2.40	115	20	8	8 GT/s	1600
UCS-CPU-E5-2660	E5-2660	2.20	95	20	8	8 GT/s	1600
UCS-CPU-E5-2658	E5-2658	2.10	95	20	8	8 GT/s	1600
UCS-CPU-E5-2650	E5-2650	2.00	95	20	8	8 GT/s	1600
UCS-CPU-E5-2650L	E5-2650L	1.80	70	20	8	8 GT/s	1600
UCS-CPU-E5-2640	E5-2640	2.50	95	15	6	7.2 GT/s	1333
UCS-CPU-E5-2637	E5-2637	3.00	80	5	2	8 GT/s	1600
UCS-CPU-E5-2630	E5-2630	2.30	95	15	6	7.2 GT/s	1333
UCS-CPU-E5-2630L	E5-2630L	2.00	60	15	6	7.2 GT/s	1333
UCS-CPU-E5-2620	E5-2620	2.00	95	15	6	7.2 GT/s	1333
UCS-CPU-E5-2643	E5-2643	3.30	130	10	4	8 GT/s	1600
UCS-CPU-E5-2609	E5-2609	2.40	80	10	4	6.4 GT/s	1066

Notes...

1. If higher or lower speed DIMMs are selected than what is shown in the table for a given CPU, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.
2. 1866-MHz DIMMs are supported only with Intel Xeon E5-2600 v2 CPUs

Supported Configurations

(1) One-CPU Configuration

- Choose one CPU from any one of the rows of ***Table 3 on page 9***.

(2) Two-CPU Configuration

- Choose two identical CPUs from any one of the rows of ***Table 3 on page 9***.

Caveats

- The B200 M3 configured with 1 CPU provides limited network connectivity options. The following restrictions apply:
  - A virtual interface card (VIC), the VIC 1340 or 1240, must always be installed in the VIC 1240 mezzanine connector.

  - The connectivity options are:
    - VIC 1340 or 1240 installed in VIC 1340/1240 slot and no adapter installed in the mezzanine slot
    - VIC 1340 or 1240 installed in VIC 1340/1240 slot and a Port Expander Card installed in the mezzanine slot.

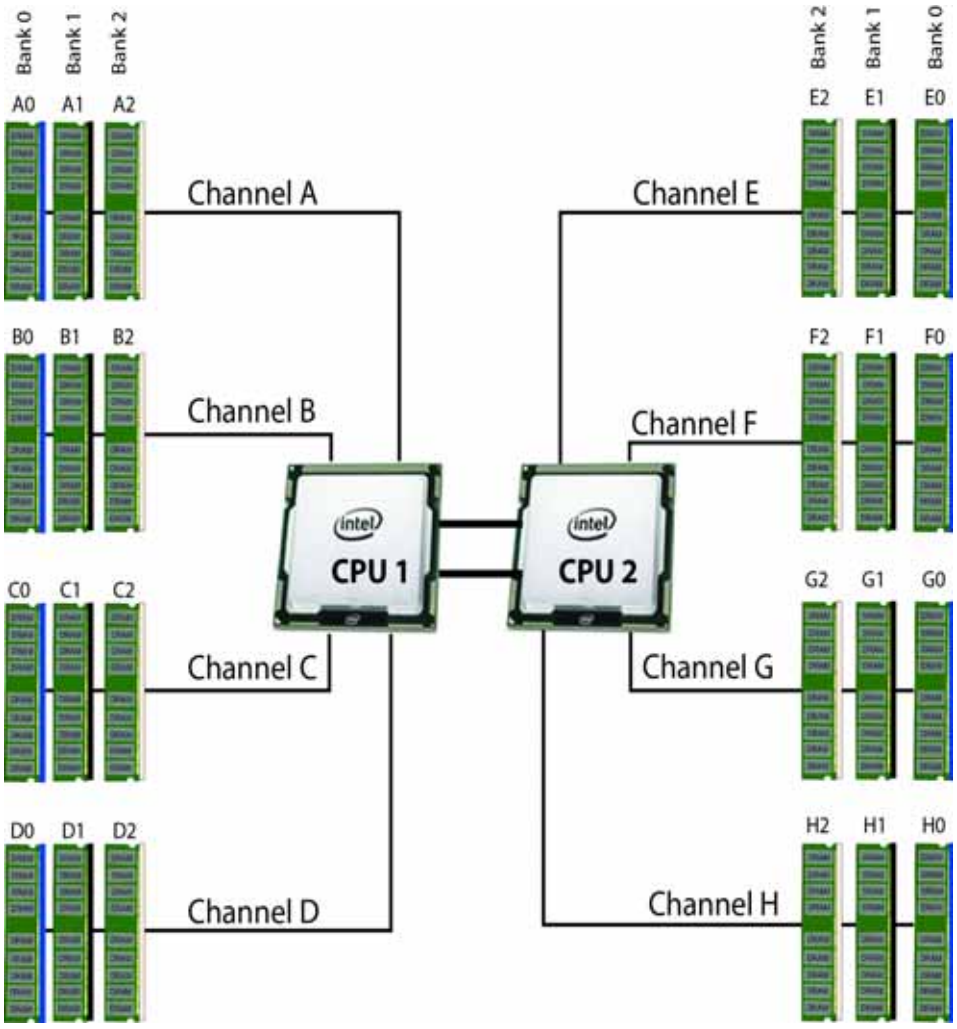
- See ***NEBS Compliance on page 49*** for complete information on network connectivity support for a B200 M3 configured with 1 CPU or 2 CPUs.
- For optimal performance, select DIMMs with the highest clock speed for a given processor.
- System speed is dependent on how many DIMMs are populated per channel. See ***Table 7 on page 16*** for details.

STEP 3 CHOOSE MEMORY

The standard memory features are:

- DIMMs
  - Clock speed: 1866, 1600, or 1333 MHz
  - Ranks per DIMM: 1, 2, or 4
  - Operational voltage: 1.35 or 1.5 V
  - Registered
- DDR3 ECC registered DIMMs (RDIMMs) or load-reduced DIMMS (LRDIMMS)
- Memory is organized with four memory channels per CPU, with up to three DIMMs per channel (DPC), as shown in ***Figure 3***. Maximum memory capacity is 768 GB (B200 M3 configured with 2 CPUs with 32 GB DIMMs).

Figure 3 UCS B200 M3 Memory Organization



Choose DIMMs and Memory Mirroring

Select the memory configuration and whether or not you want the memory mirroring option. The supported memory DIMMs and the mirroring option are listed in ***Table 4***.

NOTE: When memory mirroring is enabled, the memory subsystem simultaneously writes identical data to two adjacent channels. If a memory read from one of the channels returns incorrect data due to an uncorrectable memory error, the system automatically retrieves the data from the other channel. A transient or soft error in one channel does not affect the mirrored data, and operation continues unless there is a simultaneous error in exactly the same location on a DIMM and its mirrored DIMM. Memory mirroring reduces the amount of memory available to the operating system by 50% because only one of the two populated channels provides data.

The supported memory DIMMs in the UCS B200 M3 are listed in ***Table 4***.

Table 4 Supported DDR3 DIMMs and Memory Mirroring Option

Product ID (PID)	PID Description	Voltage	Ranks /DIMM
DIMM Options[1]			
UCS-ML-1X324RY-A	32 GB DDR3-1600-MHz LRDIMM/PC3-12800/4R/x4/1.35V	1.5/1.35 V[2]	4
UCS-ML-1X324RZ-A[1]	32 GB DDR3-1866-MHz LRDIMM PC3-14900/4R/x4/1.5 V	1.5 V	4
UCS-MR-1X162RY-A	16 GB DDR3-1600-MHz RDIMM/PC3-12800/2R/x4/1.35V	1.5/1.35 V[2]	2
UCS-MR-1X162RZ-A[1]	16 GB DDR3-1866-MHz RDIMM PC3-14900/2R/x4/1.5V	1.5 V	2
UCS-MR-1X082RY-A	8 GB DDR3-1600-MHz RDIMM/PC3-12800/2R/x4/1.35V	1.5/1.35 V[2]	2
UCS-MR-1X082RX-A[3]	8 GB DDR3-1333-MHz RDIMM/PC3-10600/2R/x4/1.35v	1.5/1.35 V[2]	2
UCS-MR-1X082RZ-A[1]	8 GB DDR3-1866-MHz RDIMM/PC3-14900/2R/x4/1.5V	1.5 V	2
UCS-MR-1X041RY-A	4 GB DDR3-1600-MHz RDIMM/PC3-12800/1R/x4/1.35V	1.5/1.35 V[2]	1
Memory Mirroring Option			
N01-MMIRROR	Memory mirroring option		

Notes...

1. 1866-MHz DIMMs are supported only with Intel Xeon E5-2600 v2 CPUs.
2. Dual voltage DIMM (operates at 1.5 V with BIOS is set for memory performance mode (default), or 1.35 V when BIOS is set for power-savings mode).
3. No longer shipping as of 11/9/2013

Supported Configurations

(1) B200 M3 configured with 1 CPU without memory mirroring

- Select from 1 to 12 DIMMs for CPU 1 (note that there are 12 DIMM slots available)

(2) B200 M3 configured with 1 CPU with memory mirroring

- Select 2, 4, 6, 8, or 12 DIMMs for CPU 1. The DIMMs will be placed by the factory as shown in ***Table 5***:

Table 5 DIMM Placement With Memory Mirroring (B200 M3 configured with 1 CPU)

Number of DIMMs per CPU	DIMM Placement in Banks (with memory mirroring implemented)
	CPU 1
2	2 DIMMs in Bank 0 (A0, B0)
4	4 DIMMs in Bank 0 (A0, B0, C0, D0)
6[1]	3 DIMMs in Bank 0 (A0, B0, C0) 3 DIMMs in Bank 1 (A1, B1, C1)
8	4 DIMMs in Bank 0 (A0, B0, C0, D0) 4 DIMMs in Bank 1 (A1, B1, C1, D1)
12	4 DIMMs in Bank 0 (A0, B0, C0, D0) 4 DIMMs in Bank 1 (A1, B1, C1, D1) 4 DIMMs in Bank 3 (A2, B2, C2, D2)

Notes...

1. Not recommended (for performance reasons)

- Select the memory mirroring option (N01-MMIRROR) as shown in ***Table 4 on page 13***.

(3) B200 M3 configured with 2 CPUs without memory mirroring:

- Select from 1 to 12 DIMMs per CPU (note that there are 12 DIMM slots per CPU)

(4) B200 M3 configured with 2 CPUs with memory mirroring:

- Select 2, 4, 6, 8, or 12 DIMMs per CPU. The DIMMs will be placed by the factory as shown in ***Table 6***:

Table 6 DIMM Placement With Memory Mirroring (B200 M3 configured with 2 CPUs)

Number of DIMMs per CPU	DIMM Placement in Banks (with memory mirroring implemented)	
	CPU 1	**CPU 2**
2	2 DIMMs in Bank 0 (A0, B0)	2 DIMMs in Bank 0 (E0, F0)
4	4 DIMMs in Bank 0 (A0, B0, C0, D0)	4 DIMMs in Bank 0 (E0, F0, G0, H0)
6[1]	3 DIMMs in Bank 0 (A0, B0, C0) 3 DIMMs in Bank 1 (A1, B1, C1)	3 DIMMs in Bank 0 (E0, F0, G0) 3 DIMMs in Bank 1 (E1, F1, G1)
8	4 DIMMs in Bank 0 (A0, B0, C0, D0) 4 DIMMs in Bank 1 (A1, B1, C1, D1)	4 DIMMs in Bank 0 (E0, F0, G0, H0) 4 DIMMs in Bank 1 (E1, F1, G1, H1)
12	4 DIMMs in Bank 0 (A0, B0, C0, D0) 4 DIMMs in Bank 1 (A1, B1, C1, D1) 4 DIMMs in Bank 2 (A2, B2, C2, D2)	4 DIMMs in Bank 0 (E0, F0, G0, H0) 4 DIMMs in Bank 1 (E1, F1, G1, H1) 4 DIMMs in Bank 2 (E2, F2, G2, H2)

Notes...

1. Not recommended (for performance reasons)

- Select the memory mirroring option (N01-MMIRROR) as shown in ***Table 4 on page 13***.

NOTE: System performance is optimized when the DIMM type and quantity are equal for both CPUs, and when all channels are filled equally across the CPUs in the server.

Caveats

- System speed is dependent on how many DIMMs are populated per channel. See ***Table 7*** for details.

Table 7 DIMM Memory Speeds

DIMM Speed	DPC	1333-MHz Capable CPU				1600-MHz Capable CPU				1866-MHz Capable CPU			
		LRDIMM		RDIMM (DR, SR)		LRDIMM		RDIMM (DR, SR)		LRDIMM		RDIMM (DR, SR)	
		Voltages		Voltages		Voltages		Voltages		Voltages		Voltages	
		1.3 V	1.5 V	1.3 V	1.5 V	1.3 V	1.5 V	1.3 V	1.5 V	1.3 V	1.5 V	1.3 V	1.5 V
1333 DIMM	1DPC	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333
	2DPC	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333
	3DPC	1066	1066	NA[1]	1066	1066	1066	NA[1]	1066	1066	1066	NA[1]	1066
1600 DIMM	1DPC	1333	1333	1333	1333	1600[2]	1600[2]	1333	1600	1600[2]	1600[2]	1333	1600
	2DPC	1333	1333	1333	1333	1600[2]	1600[2]	1333	1600	1600[2]	1600[2]	1333	1600
	3DPC	1066	1066	NA[1]	1066	1066	1066	NA[1]	1333[3]	1066	1066	NA[1]	1333[3]
1866 DIMM[4]	1DPC	NA[1]	1333	NA[1]	1333	NA[1]	1600	NA[1]	1600	NA[1]	1866	NA[1]	1866
	2DPC	NA[1]	1333	NA[1]	1333	NA[1]	1600	NA[1]	1600	NA[1]	1866	NA[1]	1866
	3DPC	NA[1]	1066	NA[1]	1066	NA[1]	1066	NA[1]	1333	NA[1]	1333	NA[1]	1333

Notes...

1. NA = not applicable
2. These DIMMs operate at 1333 MHz instead of 1600 MHz when used with any E5-2600 CPUs. They operate at 1600 MHz when used with E5-2600 v2 CPUs that support 1600- and 1866-MHz speeds.
3. For E5-2600 v2 CPUs, 8-GB 1600-MHz DIMMs at 3 DIMMs per channel currently are set to operate at 1066 MHz instead of 1333 MHz
4. 1866-MHz DIMMs are only offered and supported with E5-2600 v2 CPU-configured servers

- For optimum performance, do not mix DIMMs with different frequencies. If you mix DIMM frequencies, the system defaults to the lower frequency.
- Do not mix RDIMMs with LRDIMMs
- DIMMs for CPU 1 and CPU 2 (when populated) must always be configured identically.
- Memory mirroring reduces the amount of available memory by 50% (quantity of DIMMs must be even for mirroring).
- By default, starting with UCSM 2.0.4, DIMMs run in memory performance mode (1.5v) by BIOS default, which yields faster memory speeds than when the BIOS is set for the memory to run in power-savings mode. Memory speed is dependent on factors such as:
  - CPU choice

- DIMM choice
- DIMM population (how many DIMMs per channel are populated)
- BIOS setting.

  For the DIMMs to run in power-savings mode (1.35 V, if the DIMM supports this), change the BIOS setting to power-savings mode.

- With 3 RDIMMs populated per channel, memory always runs at 1.5 V regardless if the BIOS setting is power-savings mode (1.35 V) or performance mode (1.5 V).
- With 3 LRDIMMs populated per channel, memory can operate at 1.5 V or 1.35 V, depending on the BIOS setting.

For more information regarding memory, see ***CPUs and DIMMs on page 38***.

STEP 4 CHOOSE HARD DISK DRIVES or SOLID STATE DRIVES (OPTIONAL)

The UCS B200 M3 can be ordered with or without drives. The standard disk drive features are:

- 2.5-inch small form factor
- Hot-pluggable
- Sled-mounted

NOTE: The UCS B200 M3 blade server meets the external storage target and switch certifications as described in the following link:

http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/interoperability/matrix/Matrix8.html#wp323852

Choose Drives

The supported drives in the UCS B200 M3 are listed in ***Table 8***.

Table 8 Supported Hot-Pluggable Sled-Mounted HDDs and SSDs

Product ID (PID)	PID Description	Drive Type	Capacity
HDDs			
A03-D1TBSATA	1 TB 6 Gb SATA 7.2K RPM SFF HDD	SATA	1 TB
A03-D500GC3	500 GB 6 Gb SATA 7.2K RPM SFF HDD	SATA	500 GB
UCS-HDD900GI2F106	900 GB 6 Gb SAS 10K RPM SFF HDD	SAS	900 GB
A03-D600GA2	600 GB 6 Gb SAS 10K RPM SFF HDD	SAS	600 GB
UCS-HDD300GI2F105	300 GB 6 Gb SAS 15K RPM SFF HDD	SAS	300 GB
A03-D300GA2	300 GB 6 Gb SAS 10K RPM SFF HDD	SAS	300 GB
SSDs			
UCS-SD800G0KS2-EP	800 GB SAS 2.5" Enterprise Performance SSD	SAS	800 GB
UCS-SD400G0KS2-EP	400 GB SAS 2.5" Enterprise Performance SSD	SAS	400 GB
UCS-SD400G0KA2-G	400 GB SATA 2.5" Enterprise Value SSD	SATA	400 GB
UCS-SD200G0KS2-EP	200 GB SAS 2.5” Enterprise Performance SSD	SAS	200 GB
UCS-SD100G0KA2-G	100GB SATA 2.5" Enterprise Value SSD	SATA	100 GB

NOTE: The integrated RAID controller supports hard disk drives (HDDs) or solid state drives (SSDs). Write cache is not implemented. SSDs are recommended for applications requiring high-speed local storage, which is an order of magnitude faster than HDDs.

Supported Configurations

(1) 1-Drive System

- Select one of the drives listed in ***Table 8***.

(1) 2-Drive System

- Select two identical drives from ***Table 8***. There is no support for mixing of drive types or capacities.

Caveats

- If you select two drives, they must be identical in type and capacity.

STEP 5 CHOOSE ADAPTERS

The adapter offerings are:

- Cisco Virtual Interface Cards (VICs)

Cisco developed Virtual Interface Cards (VICs) to provide flexibility to create multiple NIC and HBA devices. The VICs also support adapter Fabric Extender and Virtual Machine Fabric Extender technologies.

- Converged Network Adapters (CNAs)

Emulex and QLogic Converged Network Adapters (CNAs) consolidate Ethernet and Storage (FC) traffic on the Unified Fabric by supporting FCoE.

- Cisco UCS Storage Accelerator Adapters

Cisco UCS Storage Accelerator adapters are designed specifically for the Cisco UCS B-series M3 blade servers and integrate seamlessly to allow improvement in performance and relief of I/O bottlenecks.

NOTE: There are two slots on the server. One accommodates Cisco, Emulex, and QLogic I/O adapters or Cisco Storage Accelerator adapters as well as other options, and one is a dedicated slot for the VIC 1340 or 1240 adapter only. ***Table 9*** shows which adapters plug into each of the two slots. Only the VIC 1340 or 1240 adapter plugs into the VIC 1340/1240 adapter slot. All other adapters plug into the mezzanine adapter slot.

NOTE: You must have a B200 M3 configured with 2 CPUs to support cards that plug into the mezzanine connector. The VIC 1340 or 1240 adapter is supported on both 1- and 2-CPU configured systems.

Choose a Mezzanine Adapter

The supported mezzanine adapters in the UCS B200 M3 are listed in ***Table 9***.

Table 9 Supported Mezzanine Adapters

Product ID (PID)	PID Description	Connector
Virtual Interface Cards (VICs)		
UCSB-MLOM-40G-03	Cisco UCS VIC 1340 adapter for M3 blade servers. Plugs into the dedicated VIC 1340/1240 slot only. Only the VIC 1340 or VIC 1240 can be plugged into the slot.	VIC 1340/1240
UCSB-MLOM-40G-01	Cisco UCS VIC 1240 adapter for M3 blade servers. Plugs into the dedicated VIC 1340/1240 slot only. Only the VIC 1340 and VIC 1240 can be plugged into the slot.	VIC 1340/1240
UCS-VIC-M83-8P	Cisco UCS VIC 1380 dual 40Gb capable Virtual Interface Card	Mezzanine

Table 9 Supported Mezzanine Adapters *(continued)*

Product ID (PID)	PID Description	Connector
UCS-VIC-M82-8P	Cisco UCS VIC 1280 dual 40Gb capable Virtual Interface Card	Mezzanine
Converged Network Adapters (CNAs)		
UCSB-MEZ-QLG-03	Cisco UCS CNA M73KR-Q QLogic Adapter	Mezzanine
UCSB-MEZ-ELX-03	Cisco UCS CNA M73KR-E Emulex Adapter	Mezzanine
Cisco Storage Accelerators		
UCSB-F-FIO-785M	Cisco UCS 785 GB MLC Fusion-io ioDrive2	Mezzanine
UCSB-F-FIO-365M	Cisco UCS 365 GB MLC Fusion-io ioDrive2	Mezzanine
UCSB-F-LSI-400S	LSI 400 GB SLC WarpDrive	Mezzanine
Expander Option		
UCSB-MLOM-PT-01	Cisco UCS Port Expander Card. This is a hardware option to enable an additional 4 ports of the VIC 1340 or 1240, bringing the total capability of the VIC 1340/1240 to dual 4 x 10 GbE	Mezzanine

Supported Configurations

(1) B200 M3 configured with 1 CPU

For a B200 M3 configured with 1 CPU, the supported configurations are listed in ***Table 10***. Choose one configuration.

Table 10 Supported VIC 1340/1240 and Mezzanine Adapter Configurations

Fabric Extender Compatibility	Adapter in VIC 1340/1240 Slot	Adapter in Mezzanine Slot	Ports	Reference
2208XP (PIDs UCS-IOM-2208XP, UCS-IOM2208-16FET)				
2208XP	VIC 1340 or 1240	None	4 x 10 Gb	***Figure 10 on page 54***
2208XP	VIC 1340 or 1240	Port Expander Card	8 x 10 Gb	***Figure 11 on page 55***
2204XP (PIDs UCS-IOM-2204XP, UCS-IOM2204-8FET)				
2204XP	VIC 1340 or 1240	None	2 x 10 Gb	***Figure 12 on page 56***
2204XP	VIC 1340 or 1240	Port Expander Card	4 x 10 Gb	***Figure 13 on page 56***

Table 10 Supported VIC 1340/1240 and Mezzanine Adapter Configurations

Fabric Extender Compatibility	Adapter in VIC 1340/1240 Slot	Adapter in Mezzanine Slot	Ports	Reference
2104XP (PID N20-I6584)				
2104XP	VIC 1340 or 1240	None	2 x 10 Gb	*Figure 14 on page 57*

(2) B200 M3 configured with 2 CPUs

For a B200 M3 configured with 2 CPUs, the supported configurations are listed in *Table 11*. Choose one configuration.

Table 11 Supported VIC 1340/1240 and Mezzanine Adapter Configurations

Fabric Extender Compatibility	Adapter in VIC 1340/1240 Slot	Adapter in Mezzanine Slot	Ports	Reference
2208XP (PIDs UCS-IOM-2208XP, UCS-IOM2208-16FET)				
2208XP	VIC 1340 or 1240	None	4 x 10 Gb	*Figure 15 on page 58*
2208XP	VIC 1340 or 1240	VIC 1380 or 1280[1]	8 x 10 Gb	*Figure 16 on page 59*
2208XP	VIC 1340 or 1240	Emulex or QLogic I/O adapter, or Cisco UCS Storage Accelerator	6 x 10 Gb 4 x 10 Gb	*Figure 17 on page 59*
2208XP	VIC 1340 or 1240	Port Expander Card	8 x 10 Gb	*Figure 18 on page 60*
2208XP	None	Emulex or QLogic I/O adapter[2]	2 x 10 Gb	*Figure 19 on page 60*
2204XP (PIDs UCS-IOM-2204XP, UCS-IOM2204-8FET)				
2204XP	VIC 1340 or 1240	None	2 x 10 Gb	*Figure 20 on page 61*
2204XP	VIC 1340 or 1240	VIC 1380 or 1280[1]	4 x 10 Gb	*Figure 21 on page 62*
2204XP	VIC 1340 or 1240	Emulex or QLogic I/O adapter, or Cisco UCS Storage Accelerator	4 x 10 Gb 4 x 10 Gb	*Figure 22 on page 62*
2204XP	VIC 1340 or 1240	Port Expander Card	4 x 10 Gb	*Figure 23 on page 63*
2204XP	None	Emulex or QLogic I/O adapter[1]	2 x 10 Gb	*Figure 24 on page 63*

Table 11 Supported VIC 1340/1240 and Mezzanine Adapter Configurations

Fabric Extender Compatibility	Adapter in VIC 1340/1240 Slot	Adapter in Mezzanine Slot	Ports	Reference
2104XP (PID N20-I6584)				
2104XP	VIC 1340 or 1240	None	2 x 10 Gb	*Figure 25 on page 64*
2104XP	VIC 1340 or 1240	Cisco UCS Storage Accelerator	2 x 10 Gb	*Figure 26 on page 65*

Notes...

1. Do not mix VIC 1240 with VIC 1380, and do not mix VIC 1340 with VIC 1280.
2. Specifically, the UCSB-MEZ-QLG-03 (QLogic) or UCSB-MEZ-ELX-03 (Emulex) adapter

Also see *NEBS Compliance on page 49* for more information.

To help ensure that your operating system is compatible with the adapter you have selected, please check the Hardware Compatibility List at this URL:

http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

Caveats

- If a VIC 1340 or 1240 adapter is not installed, you must choose an Emulex or QLogic I/O adapter to be installed in the mezzanine slot (see also *NEBS Compliance on page 49*)

STEP 6 ORDER A TRUSTED PLATFORM MODULE

Trusted Platform Module (TPM) is a computer chip (microcontroller) that can securely store artifacts used to authenticate the platform (server). These artifacts can include passwords, certificates, or encryption keys. A TPM can also be used to store platform measurements that help ensure that the platform remains trustworthy. Authentication (ensuring that the platform can prove that it is what it claims to be) and attestation (a process helping to prove that a platform is trustworthy and has not been breached) are necessary steps to ensure safer computing in all environments.

The TPM ordering information is listed in ***Table 12***.

Table 12 Trusted Platform Module

Product ID (PID)	PID Description
UCSX-TPM1-001	Trusted Platform Module for UCS

NOTE: The module used in this server conforms to TPM v1.2/1.3, as defined by the Trusted Computing Group (TCG). It is also SPI-based.

STEP 7 ORDER CISCO FLEXIBLE FLASH SECURE DIGITAL CARDS

Dual SDHC flash card sockets are provided on the front left side of the server.

NOTE: Dual card support (mirroring) is supported with UCS Manager 2.2.x and later.

The SDHC card ordering information is listed in ***Table 13***.

Table 13 Supported Configurations - Secure Digital Card(s)

Product ID (PID)	PID Description
UCS-SD-16G	16GB SD Card module for UCS Servers

Supported Configurations

(1) Select one or two Cisco Flexible Flash secure digital cards

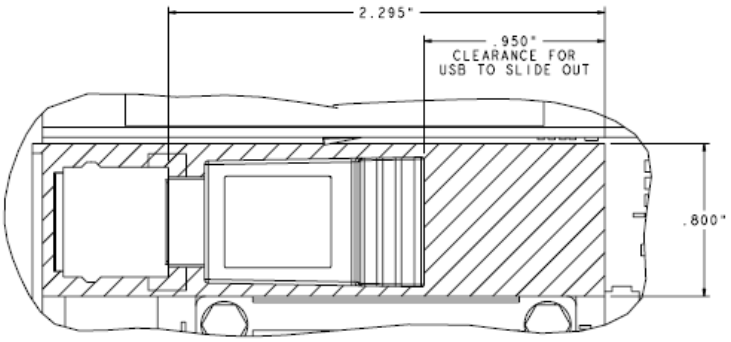
STEP 8 ORDER OPTIONAL INTERNAL USB 2.0 DRIVE

You may order one optional internal USB 2.0 drive. The USB drive ordering information is listed in *Table 14*.

Table 14 USB 2.0 Drive

Product ID (PID)	PID Description
UCS-USBFLSH-S-4GB	4GB Flash USB Drive (shorter) for all M3 servers

NOTE: A clearance of 0.950 inches (24.1 mm) is required for the USB device to be inserted and removed (see the following figure).



See *Figure 5 on page 37* for the location of the USB connector.

NOTE: When the Cisco 4GB USB key is purchased with a server, it is pre-installed into the internal USB port and held firmly in place with a clip to protect it from shock and vibration during shipment and transportation. This clip also prevents the USB key from undergoing shock and vibration during ongoing customer operational use.

STEP 9 CHOOSE OPERATING SYSTEM AND VALUE-ADDED SOFTWARE

Several operating systems and value-added software programs are available. Select as desired from ***Table 15***.

Table 15 OSs and Value-Added Software (for 2-CPU servers)

PID Description	Product ID (PID)
Microsoft Windows Server	
MSWS-08R2-STHV	Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL)
MSWS-08R2-ENHV	Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL)
MSWS-08R2-DCHV2S	Windows Svr 2008 R2-2 CPU-Data Center
MSWS-12-ST2S	Windows Server 2012 Standard (2 CPU/2 VMs)
MSWS-12-DC2S	Windows Server 2012 Datacenter (2 CPU/Unlimited VMs)
MSWS-12-ST2S-NS	Windows Server 2012 Standard (2 CPU/2 VMs) No Cisco SVC
MSWS-12-DC2S-NS	Windows Server 2012 Datacenter (2 CPU/Unlim VM) No Cisco SVC
MSWS-12R2-ST2S	Windows Server 2012 R2 Standard (2 CPU/2 VMs)
MSWS-12R2-DC2S	Windows Server 2012 R2 Datacenter (2 CPU/Unlimited VMs)
MSWS-12R2-ST2S-NS	Windows Server 2012 R2 Standard (2 CPU/2 VMs) No Cisco SVC
MSWS-12R2-DC2S-NS	Windows Server 2012 R2 Datacen (2 CPU/Unlim VM) No Cisco Svc
SUSE	
SLES-SVR-2S-1G-1A	SUSE Linux Enterprise Srvr (1-2 CPU,1 Phys);1yr Support Reqd
SLES-SVR-2S-1G-3A	SUSE Linux Enterprise Srvr (1-2 CPU,1 Phys);3yr Support Reqd
SLES-SVR-2S-1G-5A	SUSE Linux Enterprise Srvr (1-2 CPU,1 Phys);5yr Support Reqd
SLES-SVR-2S-UG-1A	SUSE Linux Enterprise Svr (1-2 CPU,Unl Vrt);1yr Support Reqd
SLES-SVR-2S-UG-3A	SUSE Linux Enterprise Svr (1-2 CPU,Unl Vrt);3yr Support Reqd
SLES-SVR-2S-UG-5A	SUSE Linux Enterprise Svr (1-2 CPU,Unl Vrt);5yr Support Reqd
SLES-SHA-2S-1A	SUSE Linux High Availability Ext (1-2 CPU); 1yr Support Reqd
SLES-SHA-2S-3A	SUSE Linux High Availability Ext (1-2 CPU); 3yr Support Reqd
SLES-SHA-2S-5A	SUSE Linux High Availability Ext (1-2 CPU); 5yr Support Reqd
SLES-HGC-2S-1A	SUSE Linux GEO Clustering for HA (1-2 CPU); 1yr Support Reqd
SLES-HGC-2S-3A	SUSE Linux GEO Clustering for HA (1-2 CPU); 3yr Support Reqd
SLES-HGC-2S-5A	SUSE Linux GEO Clustering for HA (1-2 CPU); 5yr Support Reqd
SLES-SAP-2S-1G-1A	SLES for SAP Applications (1-2 CPU,1 Phys); 1yr Support Reqd
SLES-SAP-2S-1G-3A	SLES for SAP Applications (1-2 CPU,1 Phys); 3yr Support Reqd
SLES-SAP-2S-1G-5A	SLES for SAP Applications (1-2 CPU,1 Phys); 5yr Support Reqd
SLES-SAP-2S-UG-1A	SLES for SAP Applications (1-2 CPU,Unl Vrt);1yr Support Reqd
SLES-SAP-2S-UG-3A	SLES for SAP Applications (1-2 CPU,Unl Vrt);3yr Support Reqd
SLES-SAP-2S-UG-5A	SLES for SAP Applications (1-2 CPU,Unl Vrt);5yr Support Reqd

Table 15 OSs and Value-Added Software (for 2-CPU servers) *(continued)*

PID Description	Product ID (PID)
Red Hat Enterprise Linux	
RHEL-2S-1G-1A	RHEL/2 Socket/1 Guest/1Yr Svcs Required
RHEL-2S-1G-3A	RHEL/2 Socket/1 Guest/3Yr Svcs Required
RHEL-2S-4G-1A	RHEL/2 Socket/4 Guest/1Yr Svcs Required
RHEL-2S-4G-3A	RHEL/2 Socket/4 Guest/3Yr Svcs Required
RHEL-2S-UG-1A	RHEL/2 Socket/U Guest/1Yr Svcs Required
RHEL-2S-UG-3A	RHEL/2 Socket/U Guest/3Yr Svcs Required
RHEL-HA-2S-1A	RHEL Option/High-Availability/2 Socket/1Yr Svcs Required
RHEL-HA-2S-3A	RHEL Option/High-Availability/2 Socket/3Yr Svcs Required
RHEL-RS-2S-1A	RHEL Option/Resilient w/Ha /2 Socket/1 Yr Svcs Required
RHEL-RS-2S-3A	RHEL Option/Resilient Storage w/ HA /2 Socket/3 Yr Svcs Reqd
RHEL-SFS-2S-1A	RHEL Option/Scalable File System/2 Socket/1 Yr Svcs Required
RHEL-SFS-2S-3A	RHEL Option/Scalable File System/2 Socket/1 Yr Svcs Required
BMC	
BMC-012	BMC BPPM Per Server
BMC-SE-4C	BMC BladeLogic Standard Edition, 4 Cores, Support Required
BMC-SE-6C	BMC BladeLogic Standard Edition, 6 Cores, Support Required
BMC-SE-8C	BMC BladeLogic Standard Edition, 8 Cores, Support Required
BMC-SE-10C	BMC BladeLogic Standard Edition, 10 Cores, Support Required
BMC-AE-4C	BMC BladeLogic Advanced Edition, 4 Cores, Support Required
BMC-AE-6C	BMC BladeLogic Advanced Edition, 6 Cores, Support Required
BMC-AE-8C	BMC BladeLogic Advanced Edition, 8 Cores, Support Required
BMC-AE-10C	BMC BladeLogic Standard Edition, 10 Cores, Support Required
Nexus 1000V for Hyper-V and vSphere	
N1K-VSG-UCS-BUN	Over half off N1K and VSG w/ purchase of UCS B/C Series
N1K-VLEM-UCS-1	Nexus 1000V License Paper Delivery (1 CPU) for bundles
VSG-VLEM-UCS-1	VSG License Paper Delivery (1 CPU) for bundles
UCS Director	
CUIC-PHY-SERV-BM-U	Cisco Cloupia Resource Lic - One Phy Server node bare metal
CUIC-PHY-SERV-U	Cisco Cloupia Resource Lic - One physical Server node
CUIC-TERM	Acceptance of Cisco Cloupia License Terms

Table 15 OSs and Value-Added Software (for 2-CPU servers) *(continued)*

PID Description	Product ID (PID)
VMware 5	
VMW-VS5-STD-1A	VMware vSphere 5 Standard for 1 Processor, 1 Year, Support Rqd
VMW-VS5-STD-2A	VMware vSphere 5 Standard for 1 Processor, 2 Year, Support Rqd
VMW-VS5-STD-3A	VMware vSphere 5 Standard for 1 Processor, 3 Year, Support Rqd
VMW-VS5-STD-4A	VMware vSphere 5 Standard for 1 Processor, 4 Year, Support Rqd
VMW-VS5-STD-5A	VMware vSphere 5 Standard for 1 Processor, 5 Year, Support Rqd
VMW-VS5-ENT-1A	VMware vSphere 5 Enterprise for 1 Processor, 1 Year Support Rqd
VMW-VS5-ENT-2A	VMware vSphere 5 Enterprise for 1 CPU, 2 Yr Support Rqd
VMW-VS5-ENT-3A	VMware vSphere 5 Enterprise for 1 CPU, 3 Yr Support Rqd
VMW-VS5-ENT-4A	VMware vSphere 5 Enterprise for 1 Processor, 4 Year Support Rqd
VMW-VS5-ENT-5A	VMware vSphere 5 Enterprise for 1 CPU, 5 Yr Support Rqd
VMW-VS5-ENTP-1A	VMware vSphere 5 Enterprise Plus for 1 Processor, 1 Year Support Rqd
VMW-VS5-ENTP-2A	VMware vSphere 5 Enterprise Plus for 1 CPU, 2 Yr Support Rqd
VMW-VS5-ENTP-3A	VMware vSphere 5 Enterprise Plus for 1 Processor, 3 Year Support Rqd
VMW-VS5-ENTP-4A	VMware vSphere 5 Enterprise Plus for 1 Processor, 4 Year Support Rqd
VMW-VS5-ENTP-5A	VMware vSphere 5 Enterprise Plus for 1 Processor, 5 Year Support Rqd
VMW-VC5-STD-1A	VMware vCenter 5 Server Standard, 1 yr support required
VMW-VC5-STD-2A	VMware vCenter 5 Server Standard, 2 yr support required
VMW-VC5-STD-3A	VMware vCenter 5 Server Standard, 3 yr support required
VMW-VC5-STD-4A	VMware vCenter 5 Server Standard, 4 yr support required
VMW-VC5-STD-5A	VMware vCenter 5 Server Standard, 5 yr support required
UCS-VMW-TERMS	Acceptance of Terms, Standalone VMW License for UCS Servers

NOTE: For additional information, see OS/hypervisor support matrix at the following link:

http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

STEP 10 CHOOSE OPERATING SYSTEM MEDIA KIT

Choose the optional operating system media listed in ***Table 16***.

Table 16 OS Media

Product ID (PID)	PID Description
RHEL-6	RHEL 6 Recovery Media Only (Multilingual)
SLES-11	SLES 11 media only (multilingual)
MSWS-08R2-STHV-RM	Windows Svr 2008 R2 ST (1-4CPU, 5CAL), Media
MSWS-08R2-ENHV-RM	Windows Svr 2008 R2 EN (1-8CPU, 25CAL), Media
MSWS-08R2-DCHV-RM	Windows Svr 2008 R2 DC (1-8CPU, 25CAL), Media

STEP 11 CHOOSE SERVICE and SUPPORT LEVEL

A variety of service options are available, as described in this section.

Unified Computing Warranty, No Contract

If you have noncritical implementations and choose to have no service contract, the following coverage is supplied:

- Three-year parts coverage.
- Next business day (NBD) parts replacement eight hours a day, five days a week.
- 90-day software warranty on media.
- Downloads of BIOS, drivers, and firmware updates.
- UCSM updates for systems with Unified Computing System Manager. These updates include minor enhancements and bug fixes that are designed to maintain the compliance of UCSM with published specifications, release notes, and industry standards.

Unified Computing Support Service

For support of the entire Unified Computing System, Cisco offers the Cisco Unified Computing Support Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Access to Cisco Technical Assistance Center (TAC) is provided around the clock, from anywhere in the world.

For UCS blade servers, there is Smart Call Home, which provides proactive, embedded diagnostics and real-time alerts. For systems that include Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Unified Computing Support Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment. You can choose a desired service listed in ***Table 17***.

Table 17 Unified Computing Support Service

Product ID (PID)	On Site?	Description
CON-PREM-B200M3	Yes	ONSITE 24X7X2 UCS B200 M3 Blade Server
CON-OSP-B200M3	Yes	ONSITE 24X7X4 UCS B200 M3 Blade Server
CON-OSE-B200M3	Yes	ONSITE 8X5X4 UCS B200 M3 Blade Server
CON-OS-B200M3	Yes	ONSITE 8X5XNBD UCS B200 M3 Blade Server
CON-S2P-B200M3	No	SMARTNET 24X7X2 UCS B200 M3 Blade Server
CON-SNTP-B200M3	No	SMARTNET 24X7X4 UCS B200 M3 Blade Server
CON-SNTE-B200M3	No	SMARTNET 8X5X4 UCS B200 M3 Blade Server
CON-SNT-B200M3	No	SMARTNET 8X5XNBD UCS B200 M3 Blade Server

Unified Computing Warranty Plus Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco Unified Computing Warranty Plus Service. You can choose from several levels of advanced parts replacement coverage, including onsite parts replacement in as little as four hours. Warranty Plus provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required. You can choose a service listed in ***Table 18***.

Table 18 UCS Computing Warranty Plus Service

Product ID (PID)	Service Level GSP	On Site?	Description
CON-UCW7-B200M3	UCW7	Yes	UC PLUS 24X7X4OS UCS B200 M3 Blade Server
CON-UCW5-B200M3	UCW5	Yes	UC PLUS 8X5XNBDOS UCS B200 M3 Blade Server

Unified Computing Partner Support Service

Cisco Partner Support Service (PSS) is a Cisco Collaborative Services service offering that is designed for partners to deliver their own branded support and managed services to enterprise customers. Cisco PSS provides partners with access to Cisco's support infrastructure and assets to help them:

- Expand their service portfolios to support the most complex network environments
- Lower delivery costs
- Deliver services that increase customer loyalty

Partner Unified Computing Support Options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice.

PSS is available to all Cisco PSS partners, but requires additional specializations and requirements. For additional information, see the following URL:

www.cisco.com/go/partnerucssupport

The two Partner Unified Computing Support Options include:

- Partner Support Service for UCS
- Partner Support Service for UCS Hardware Only

Partner Support Service for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. See ***Table 19***.

Table 19 Partner Support Service for UCS

Product ID (PID)	Service Level GSP	On Site?	Description
CON-PSJ1-B200M3	PSJ1	No	UCS SUPP PSS 8X5XNBD UCS B200 M3 Blade Server
CON-PSJ2-B200M3	PSJ2	No	UCS SUPP PSS 8X5X4 UCS B200 M3 Blade Server
CON-PSJ3-B200M3	PSJ3	No	UCS SUPP PSS 24X7X4 UCS B200 M3 Blade Server
CON-PSJ4-B200M3	PSJ4	No	UCS SUPP PSS 24X7X2 UCS B200 M3 Blade Server

Partner Support Service for UCS Hardware Only provides customers with replacement parts in as little as two hours. See ***Table 20***.

Table 20 Partner Support Service for UCS (Hardware Only)

Product ID (PID)	Service Level GSP	On Site?	Description
CON-PSW2-B200M3	PSW2	No	UCS W PL PSS 8X5X4 UCS B200 M3 Blade Server
CON-PSW3-B200M3	PSW3	No	UCS W PL PSS 24X7X4 UCS B200 M3 Blade Server
CON-PSW4-B200M3	PSW4	No	UCS W PL PSS 24X7X2 UCS B200 M3 Blade Server

Unified Computing Combined Support Service

Combined Services makes it easier to purchase and manage required services under one contract. SMARTnet services for UCS help increase the availability of your vital data center infrastructure and realize the most value from your unified computing investment. The more benefits you realize from the Cisco Unified Computing System (Cisco UCS), the more important the technology becomes to your business. These services allow you to:

- Optimize the uptime, performance, and efficiency of your UCS
- Protect your vital business applications by rapidly identifying and addressing issues
- Strengthen in-house expertise through knowledge transfer and mentoring
- Improve operational efficiency by allowing UCS experts to augment your internal staff resources
- Enhance business agility by diagnosing potential issues before they affect your operations

You can choose a service listed in ***Table 21***.

Table 21 UCS Computing Combined Support Service

Product ID (PID)	Service Level GSP	On Site?	Description
CON-NCF2-B200M3	NCF2	No	CMB SPT SVC 24X7X2 UCS B200 M3 Blade Server
CON-NCF2P-B200M3	NCF2P	Yes	CMB SPT SVC 24X7X2OS UCS B200 M3 Blade Server
CON-NCF4P-B200M3	NCF4P	Yes	CMB SPT SVC 24X7X4OS UCS B200 M3 Blade Server
CON-NCF4S-B200M3	NCF4S	Yes	CMB SPT SVC 8X5X4OS UCS B200 M3 Blade Server
CON-NCFCS-B200M3	NCFCS	Yes	CMB SPT SVC 8X5XNBDOS UCS B200 M3 Blade Server
CON-NCFE-B200M3	NCFE	No	CMB SPT SVC 8X5X4 UCS B200 M3 Blade Server
CON-NCFP-B200M3	NCFP	No	CMB SPT SVC 24X7X4 UCS B200 M3 Blade Server
CON-NCFT-B200M3	NCFT	No	CMB SPT SVC 8X5XNBD UCS B200 M3 Blade Server

Unified Computing Drive Retention Service

With the Cisco Unified Computing Drive Retention (UCDR) Service, you can obtain a new disk drive in exchange for a faulty drive without returning the faulty drive. In exchange for a Cisco replacement drive, you provide a signed Certificate of Destruction (CoD) confirming that the drive has been removed from the system listed, is no longer in service, and has been destroyed.

Sophisticated data recovery techniques have made classified, proprietary, and confidential information vulnerable, even on malfunctioning disk drives. The UCDR service enables you to retain your drives and ensures that the sensitive data on those drives is not compromised, which reduces the risk of any potential liabilities. This service also enables you to comply with regulatory, local, and federal requirements.

If your company has a need to control confidential, classified, sensitive, or proprietary data, you might want to consider one of the Drive Retention Services listed in ***Table 22***.

NOTE: Cisco does not offer a certified drive destruction service as part of this service.

Table 22 Drive Retention Service Options

Service Description	Service Program Name	Service Level GSP	Service Level	Product ID (PID)
UCS Support Service With Drive Retention	UC SUPP DR	UCSD5	8x5xNBD Onsite	CON-UCSD5-B200M3
		UCSD7	24x7x4 Onsite	CON-UCSD7-B200M3
UCS Warranty Plus With Drive Retention	UC PLUS DR	UCWD5	8x5xNBD Onsite	CON-UCWD5-B200M3
		UCWD7	24x7x4 Onsite	CON-UCWD7-B200M3

For more service and support information, see the following URL:

http://www.cisco.com/en/US/services/ps2961/ps10312/ps10321/Cisco_UC_Warranty_Support_DS.pdf

For a complete listing of available services for Cisco Unified Computing System, see this URL:

http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

ORDER OPTIONAL KVM LOCAL I/O CABLE*

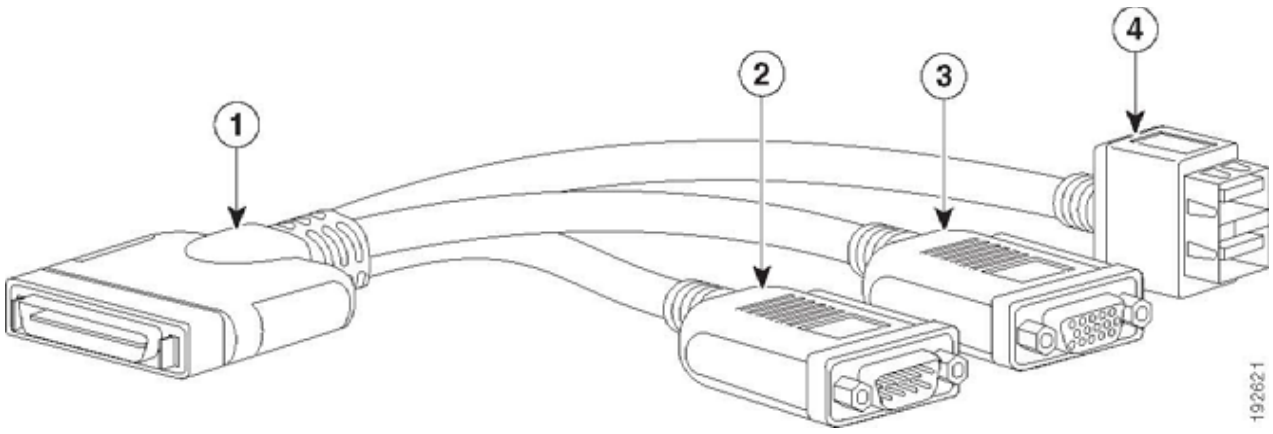
The KVM local I/O cable ships with every UCS 5100 Series blade server chassis accessory kit. The KVM local I/O cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM local I/O cable ordering information is listed in ***Table 23***.

Table 23 KVM Local I/O Cable

Product ID (PID)	PID Description
N20-BKVM=	KVM local IO cable for UCS servers console port

Figure 4 KVM Local I/O Cable



1	Connector (to server front panel)	**3**	VGA connector (for a monitor)
2	DB-9 serial connector	**4**	Two-port USB connector (for a mouse and keyboard)

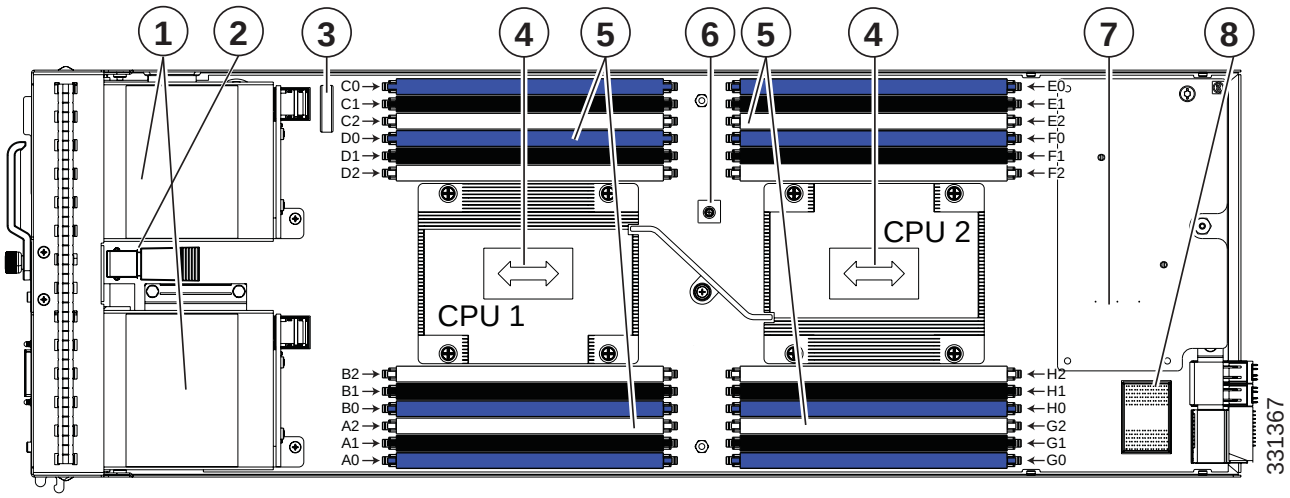
NOTE: *The blade chassis ships with the KVM local I/O cable.

SUPPLEMENTAL MATERIAL

System Board

A top view of the UCS B200 M3 system board is shown in ***Figure 5***.

Figure 5 UCS B200 M3 System Board



1	Drive bays	**5**	DIMM slots
2	Internal USB connector[1]	**6**	Diagnostic button
3	Battery	**7**	VIC 1340/1240 adapter (shown installed)
4	CPU and heat sink	**8**	Mezzanine adapter slot (mezzanine adapter not shown installed)

Notes...

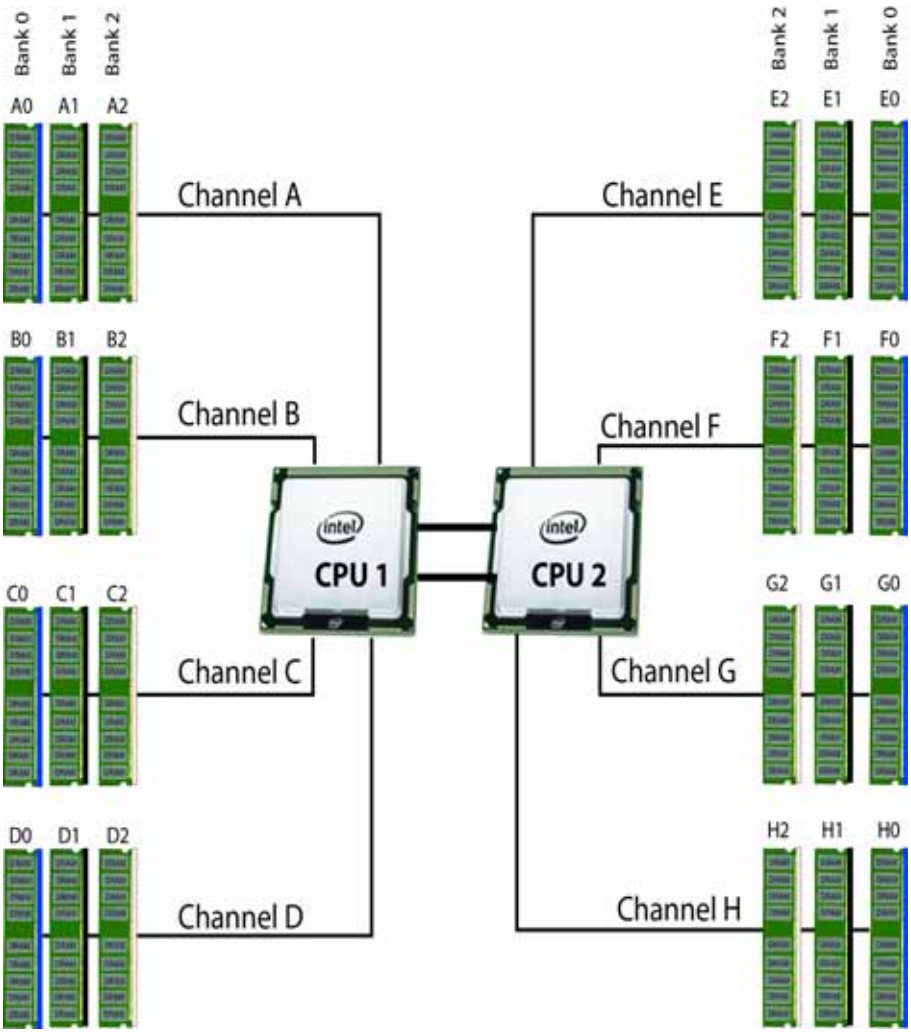
1. A USB device installed in this connector must have sufficient clearance to easily slide in and out. The Cisco USB device clearance is 0.950 inches (24.1 mm), which is a sufficient amount of clearance.

CPUs and DIMMs

Physical Layout

Memory is organized as shown in ***Figure 6***.

Figure 6 UCS B200 M3 Memory Organization



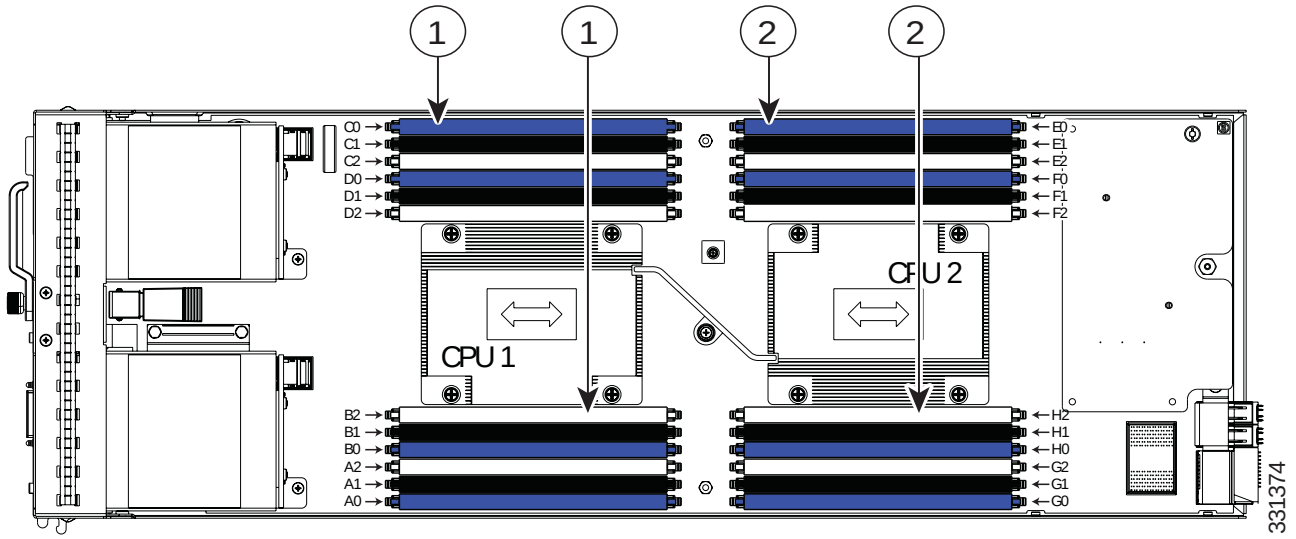
Each CPU controls four memory channels, as follows:

- CPU1: Channels A, B, C, and D
  - Bank 0 - A0, B0, C0, and D0 (blue DIMM slots)
  - Bank 1 - A1, B1, C1, and D1 (black DIMM slots)
  - Bank 2 - A2, B2, C2, and D2 (white DIMM slots)
- CPU2: Channels E, F, G, and H
  - Bank 0 - E0, F0, G0, and H0 (blue DIMM slots)

- Bank 1 - E1, F1, G1, and H1 (black DIMM slots)
- Bank 2 - E2, F2, G2, and H2 (white DIMM slots)

The DIMM and CPU physical layout is shown in ***Figure 7***. The 12 DIMM slots at the left are controlled by CPU 1 and the 12 DIMM slots on the right are controlled by CPU 2.

Figure 7 DIMM and CPU Layout



1	Channels A-D for CPU 1	**2**	Channels E-H for CPU 2

DIMM Population Rules

When considering the memory configuration of your server, you should take into account the following:

- For optimum performance, populate at least one DIMM per memory channel per CPU.
- Do not mix RDIMMs with LRDIMMs.
- Each channel has three DIMM slots (for example, channel A = slots A0, A1, and A2).
  - A channel can operate with one, two, or three DIMMs installed.
  - If a channel has only one DIMM, populate slot 0 first (the blue slot).
- When both CPUs are installed, populate the DIMM slots of each CPU identically.
  - Fill bank 0 blue slots in the channels first: A0, E0, B0, F0, C0, G0, D0, H0
  - Fill bank 1 black slots in the channels second: A1, E1, B1, F1, C1, G1, D1, H1
  - Fill bank 2 white slots in the channels third: A2, E2, B2, F2, C2, G2, D2, H2
- Observe the DIMM rules shown in ***Table 24***

Table 24 DIMM Rules for B200 M3 Servers

DIMM Parameter	DIMMs in the Same Channel	DIMMs in the Same Bank[1]
DIMM Capacity		
RDIMM = 16, 8, or 4 GB	DIMMs in the same channel (for example, A0, A1, A2) can have different capacities.	For best performance, DIMMs in the same bank (for example, A0, B0, C0, D0) should have the same capacity.
LRDIMM = 32 GB	You cannot mix 32 GB LRDIMMs with any RDIMM.	You cannot mix 32 GB LRDIMMs with any RDIMM.
DIMM Speed		
1866, 1600 or 1333 MHz[2]	DIMMs will run at the lowest speed of the DIMMs/CPUs installed.	DIMMs will run at the lowest speed of the DIMMs/CPUs installed.
DIMM Type		
RDIMMs or LRDIMMs	You cannot mix LRDIMMs with RDIMMS.	You cannot mix LRDIMMs with RDIMMS.
DIMMs per Channel (DPC)	**1 DPC or 2 DPC**	**3 DPC**
	See ***Table 7 on page 16*** for valid LRDIMM and RDIMM 1 DPC and 2 DPC memory configurations	See ***Table 7 on page 16*** for valid LRDIMM and RDIMM 3 DPC configurations

Notes...

1. Although you can have different DIMM capacities in the same bank, this will result in less than optimal performance. For optimal performance, all DIMMs in the same bank should be identical.
2. Only 1866-, 1600-, and 1333-MHz DIMMs are currently available for the B200 M3 server.

DIMM Population Order

Populate the DIMMs for a CPU according to ***Table 25***.

Table 25 DIMM Population Order per CPU

DIMMs per CPU	Populate CPU 1 Slots	Populate CPU 2 Slots
1	A0	E0
2	A0, B0	E0, F0
3	A0, B0, C0	E0, F0, G0
4	A0, B0, C0, D0	E0, F0, G0, H0
6[1]	A0, B0, C0, A1, B1, C1	E0, F0, G0, E1, F1, G1
8	A0, B0, C0, D0, A1, B1, C1, D1	E0, F0, G0, H0, E1, F1, G1, H1
12	A0, B0, C0, D0, A1, B1, C1, D1, A2, B2, C2, D2	E0, F0, G0, H0, E1, F1, G1, H1, E2, F2, G2, H2

Notes...

1. Not recommended (for performance reasons)

Recommended Memory Configuration

This section explains the recommended DIMM population order rules for the B200 M3 server.

- All DIMMs must be DDR3 DIMMs.
- Do not mix:
  - DIMMs with different clock rates in a channel
  - RDIMMs and LRDIMMs
  - ECC and non-ECC DIMMs
- There are blue, black, and white DIMM slots. Populate the blue slots first.
- When single- and dual-rank DIMMs are populated for 2DPC, always populate the dual-rank DIMM in the blue DIMM slot and the single-rank DIMM in the black DIMM slot.

Many memory configurations are possible. For best results, follow ***Table 26*** when populating 1866- and 1600-MHz DIMMs for Intel Xeon E5-2600 v2 CPUs and ***Table 27 on page 43*** when populating 1600-MHz DIMMs for Intel Xeon E5-2600 CPUs.

Table 26 Recommended Memory Configurations for Intel Xeon E5-2600 v2 CPUs (with 1866- and 1600-MHz DIMMs)[1]

Total System Memory Size	CPU 1 DIMMs			CPU 2 DIMMs			DIMM Max Speed (MHz)	Total DIMMs
	Blue Slots Bank 0 (A0,B0, C0,D0)	Black Slots Bank 1 (A1,B1, C1,D1)	White Slots Bank 2 (A2,B2, C2,D2)	Blue Slots Bank 0 (E0,F0, G0,H0)	Black Slots Bank 1 (E1,F1, G1,H1)	White Slots Bank 2 (E2,F2, G2,H2)		
32 GB	4x4 GB	—	—	4x4 GB	—	—	N/A[2]	8
	2x8 GB	—	—	2x8 GB	—	—	1866	4
64 GB	4x4 GB	4x4 GB	—	4x4 GB	4x4 GB	—	N/A[2]	16
	4x8 GB	—	—	4x8 GB	—	—	1866	8
96 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	N/A[2]	24
	4x8 GB	2x8 GB	—	4x8 GB	2x8 GB	—	1866	12
	3x16 GB	—	—	3x16 GB	—	—	1866	6
	4x8 GB	4x4 GB	—	4x8 GB	4x4 GB	—	N/A[2]	16
128 GB	4x8 GB	4x8 GB	—	4x8 GB	4x8 GB	—	1866	16
	4x16 GB	—	—	4x16 GB	—	—	1866	8

Table 26 Recommended Memory Configurations for Intel Xeon E5-2600 v2 CPUs (with 1866- and 1600-MHz DIMMs)[1]

Total System Memory Size	CPU 1 DIMMs			CPU 2 DIMMs			DIMM Max Speed (MHz)	Total DIMMs
	Blue Slots Bank 0 (A0,B0, C0,D0)	Black Slots Bank 1 (A1,B1, C1,D1)	White Slots Bank 2 (A2,B2, C2,D2)	Blue Slots Bank 0 (E0,F0, G0,H0)	Black Slots Bank 1 (E1,F1, G1,H1)	White Slots Bank 2 (E2,F2, G2,H2)		
192 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	1066[3]	24
	4x16 GB	2x16 GB	—	4x16 GB	2x16 GB	—	1866	12
	4x16 GB	4x8 GB	—	4x16 GB	4x8 GB	—	1866	16
256 GB	4x16 GB	4x16 GB	—	4x16 GB	4x16 GB	—	1866	16
	4x32 GB	—	—	4x32 GB	—	—	1866	8
384 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	1333	24
512 GB	4x32 GB	4x32 GB	—	4x32 GB	4x32 GB	—	1866	16
768 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	1333	24

Notes...

1. Rows marked in yellow indicate best performance.
2. 1866-MHz 4 GB DIMMs are not offered.
3. For E5-2600 v2 CPUs, 8-GB 1600-MHz DIMMs at 3 DIMMs per channel currently are set to operate at 1066 MHz instead of 1333 MHz

Table 27 Recommended Memory Configurations for Intel Xeon E5-2600 CPUs (with 1600-MHz DIMMs).[1]

Total System Memory Size	CPU 1 DIMMs			CPU 2 DIMMs			DIMM Max Speed (MHz)	Total DIMMs
	Blue Slots Bank 0 (A0,B0, C0,D0)	Black Slots Bank 1 (A1,B1, C1,D1)	White Slots Bank 2 (A2,B2, C2,D2)	Blue Slots Bank 0 (E0,F0, G0,H0)	Black Slots Bank 1 (E1,F1, G1,H1)	White Slots Bank 2 (E2,F2, G2,H2)		
32 GB	4x4 GB	—	—	4x4 GB	—	—	1600	8
	2x8 GB	—	—	2x8 GB	—	—	1600	4
64 GB	4x4 GB	4x4 GB	—	4x4 GB	4x4 GB	—	1600	16
	4x8 GB	—	—	4x8 GB	—	—	1600	8

Table 27 Recommended Memory Configurations for Intel Xeon E5-2600 CPUs (with 1600-MHz DIMMs).[1]

Total System Memory Size	CPU 1 DIMMs			CPU 2 DIMMs			DIMM Max Speed (MHz)	Total DIMMs
	Blue Slots Bank 0 (A0,B0, C0,D0)	Black Slots Bank 1 (A1,B1, C1,D1)	White Slots Bank 2 (A2,B2, C2,D2)	Blue Slots Bank 0 (E0,F0, G0,H0)	Black Slots Bank 1 (E1,F1, G1,H1)	White Slots Bank 2 (E2,F2, G2,H2)		
96 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	4x4 GB	1066	24
	4x8 GB	2x8 GB	—	4x8 GB	2x8 GB	—	1600	12
	3x16 GB	—	—	3x16 GB	—	—	1600	6
	4x8 GB[2]	4x4 GB	—	4x8 GB	4x4 GB	—	1600	16
128 GB	4x8 GB	4x8 GB	—	4x8 GB	4x8 GB	—	1600	16
	4x16 GB	—	—	4x16 GB	—	—	1600	8
192 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	4x8 GB	1333	24
	4x16 GB	2x16 GB	—	4x16 GB	2x16 GB	—	1600	12
	4x16 GB[2]	4x8 GB	—	4x16 GB	4x8 GB	—	1600	16
256 GB	4x16 GB	4x16 GB	—	4x16 GB	4x16 GB	—	1600	16
	4 x 32 GB	—	—	4 x 32 GB	—	—	1600	8
384 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	4x16 GB	1333	24
512 GB	4x32 GB	4x32 GB	—	4x32 GB	4x32 GB	—	1333	16
768 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	4x32 GB	1066	24

Notes...

1. Rows marked in yellow indicate best performance.
2. When using this configuration, the BIOS runs the memory at 1.5 V (performance mode). The BIOS will not allow this configuration to run at 1.35 V.

Additional DIMM Populations

The list in ***Table 28*** is not a complete list of all supported DIMM populations, but highlights common configuration options.

Table 28 Supported DIMM Configurations

CPU 1 DIMMs	Total DIMMs for CPU 1	CPU 1 Capacity	CPU 2 DIMMs	Total DIMMs for CPU 2	CPU 2 Capacity	Total Capacity for 2 CPUs
1 x 8 GB	1	8 GB	1 x 8 GB	1	8 GB	16 GB
1 x 16 GB	1	16 GB	1 x 16 GB	1	16 GB	32 GB
2 x 4 GB	2	8 GB	2 x 4 GB	2	8 GB	16 GB
4 x 4 GB	4	16 GB	4 x 4 GB	4	16 GB	32 GB
2 x 8 GB	2	16 GB	2 x 8 GB	2	16 GB	32 GB
6 x 4 GB	6	24 GB	6 x 4 GB	6	24 GB	48 GB
8 x 4 GB	8	32 GB	8 x 4 GB	8	32 GB	64 GB
4 x 8 GB	4	32 GB	4 x 8 GB	4	32 GB	64 GB
8 x 4 GB	8	32 GB	8 x 4 GB	8	32 GB	64 GB
1 x 32 GB	1	32 GB	1 x 32 GB	1	32 GB	64 GB
5 x 8 GB	5	40 GB	5 x 8 GB	5	40 GB	80 GB
3 x 16 GB	3	48 GB	3 x 16 GB	3	48 GB	96 GB
6 x 8 GB	6	48 GB	6 x 8 GB	6	48 GB	96 GB
4x8 GB + 4x4 GB[1]	8	48 GB	4x8 GB + 4x4 GB	8	48 GB	96 GB
7 x 8 GB	7	56 GB	7 x 8 GB	7	56 GB	112 GB
4 x 16 GB	4	64 GB	4 x 16 GB	4	64 GB	128 GB
8 x 8 GB	8	64 GB	8 x 8 GB	8	64 GB	128 GB
2 x 32 GB	2	64 GB	2 x 32 GB	2	64 GB	128 GB
5 x 16	5	80 GB	5 x 16	5	80 GB	160 GB
4x16 GB + 4x4 GB[1]	8	80 GB	4x16 GB + 4x4 GB	8	80 GB	160 GB
6 x 16 GB	6	96 GB	6 x 16 GB	6	96 GB	192 GB
4x8 GB + 4x16 GB[1]	8	96 GB	4x8 GB + 4x16 GB	8	96 GB	192 GB
3 x 32 GB	3	96 GB	3 x 32 GB	3	96 GB	192 GB
7 x 16 GB	7	112 GB	7 x 16 GB	7	112 GB	224 GB
8 x 16 GB	8	128 GB	8 x 16 GB	8	128 GB	256 GB
4 x 32 GB	4	128 GB	4 x 32 GB	4	128 GB	256 GB
8 x 32 GB	8	256 GB	8 x 32 GB	8	256 GB	512 GB

Notes...

1. When using this configuration, the BIOS runs the memory at 1.5 V (performance mode). The BIOS will not allow this configuration to run at 1.35 V.

Upgrade and Servicing-Related Parts

This section lists the upgrade and servicing-related parts you may need during the life of your server. Some of these parts are configured with every server or with every UCS 5108 blade server chassis, and some may be ordered when needed or may be ordered and kept on hand as spares for future use. See ***Table 29***.

Table 29 Upgrade and Servicing-related Parts for UCS B200 M3 Server

Spare Product ID (PID)	Description
N20-BBLKD=	2.5-inch HDD Blanking Panel[1]
N20-CBLKB1=	Blade slot blanking panel for UCS 5108/single slot[2]
UCSB-HS-01-EP=	CPU Heat Sink for UCS B200 M3 and B420 M3[1]
UCSB-BAFF-B200-M3=	Air Baffle Replacement Kit for B200 M3 Server[1]
N20-MBLIBATT=	Replacement Lithium Battery for Server Motherboard (CR2032)[1]
N20-BKVM=	KVM local IO cable for UCS servers console port[2]
UCS-CPU-EP-PNP=	Pick n place CPU tools for M3/EP 10/8/6/4/2 core CPUs (Green)[3]
UCS-CPU-EP2-PNP=	Pick n place CPU tools for M3/EP v2 12 core CPUs (Purple)[4]
UCS-CPU-GREASE=	Thermal grease-for 2 CPUs-all but C220/C240-Blue tip syringe[3]
UCSX-HSCK=	UCS Processor Heat Sink Cleaning Kit (when replacing a CPU)[3]

Notes...

1. This part is included/configured with your UCS server (in some cases, as determined by the configuration of your server).
2. This part is included/configured with the UCS 5108 blade server chassis.
3. This part is included with the purchase of each optional or spare Intel Xeon E5-2600 CPU processor kit.
4. This part is included with the purchase of each optional or spare Intel Xeon E5-2600 v2 CPU processor kit.

Drive and Blade Server Blanking Panels

A drive blanking panel (N20-BBLKD=) must be installed if you remove a disk drive from a UCS server. Similarly, a blade server blanking panel (N20-CBLKB1=) must be installed if you remove a half-width blade server (such as a UCS B200 M3 server) from a blade server chassis. These panels are required to maintain system temperatures at safe operating levels, and to keep dust away from system components.

Upgrading your Server from Intel Xeon E5-2600 to Intel Xeon E5-2600 v2 CPUs (or downgrading from Intel Xeon E5-2600 v2 to Intel Xeon E5-2600 CPUs)

See the following link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/CPU/IVB/install/IVB-B.html

Adding an Additional CPU (with CPU heat sink)

All Cisco UCS two CPU socket-capable servers can be upgraded from having one to having two CPUs configured. You will need to order and install a heat sink when adding any additional CPU to a server. Instructions for installing the new CPU and heat sink can be found at the following link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1070500

Motherboard Lithium Battery

You can order a replacement motherboard battery. Installation instructions are found at this link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1034829

CPU Removal and Installation ("pick n place") Tool Set

The Pick n Place tool set is used to install a CPU in its socket without damage. It must be used each time a CPU is installed in a UCS "M3" server.

Instructions for using this tool set are found at the following link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1070500

NOTE: When you purchase a spare CPU, the Pick n Place Toolkit is included.

Thermal Grease (with syringe applicator) for CPU to Heatsink Seal

Thermal grease must be applied to the top of the CPU where it comes in contact with the heat sink. Instructions for applying thermal grease are found at:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1070500

CAUTION: Use only the thermal grease specified for this server (UCS-CPU-GREASE=). This thermal grease comes in a blue-tipped syringe and is to be used in all servers except the C220 M3 and C240 M3 servers, which use thermal grease in a red-tipped syringe (UCS-CPU-GREASE2=).

Thermal grease in the red-tipped syringe is only to be used for the C220 M3 and C240 M3 servers and has different thermal conductivity properties, which may cause overheating if used in the B200 M3 server. Likewise, thermal grease in the blue-tipped syringe is only to be used for all UCS servers other than the C220 M3 and C240 M3 (such as the B200 M3 server) and has different thermal conductivity properties, which may cause overheating if used in the C220 M3 and C240 M3 servers.

DO NOT use thermal grease available for purchase at any commercial electronics store. If these instructions are not followed, the CPU may overheat and be destroyed.

NOTE: When you purchase a spare CPU, the thermal grease with syringe applicator is included.

Air Baffle Replacement Kit

Air baffles are designed to direct airflow through the server to maintain server temperature at a safe operating level. The UCS B200 M3 server comes shipped with two identical air baffles covering the DIMM socket areas of the server. These baffles must always remain installed during server operation. The Air Baffle Replacement Kit includes the two (identical) air baffles needed for one UCS B200 M3 server. For instructions on how to remove and replace the air baffles, see the following link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1034378

CPU Heat Sink Cleaning Kit

The cleaning kit is used to remove the existing thermal compound from the bottom of the heat sink during a CPU replacement process. Instructions for cleaning are found at the following link:

http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/B200M3.html#wp1010281

NOTE: When you purchase a spare CPU, the CPU cleaning kit is included.

NEBS Compliance

When configured with the specific set of components shown in ***Table 30***, the UCS B200 M3 blade server meets Network Building Equipment Standards (NEBS) Level 1 and Level 3 compliance.

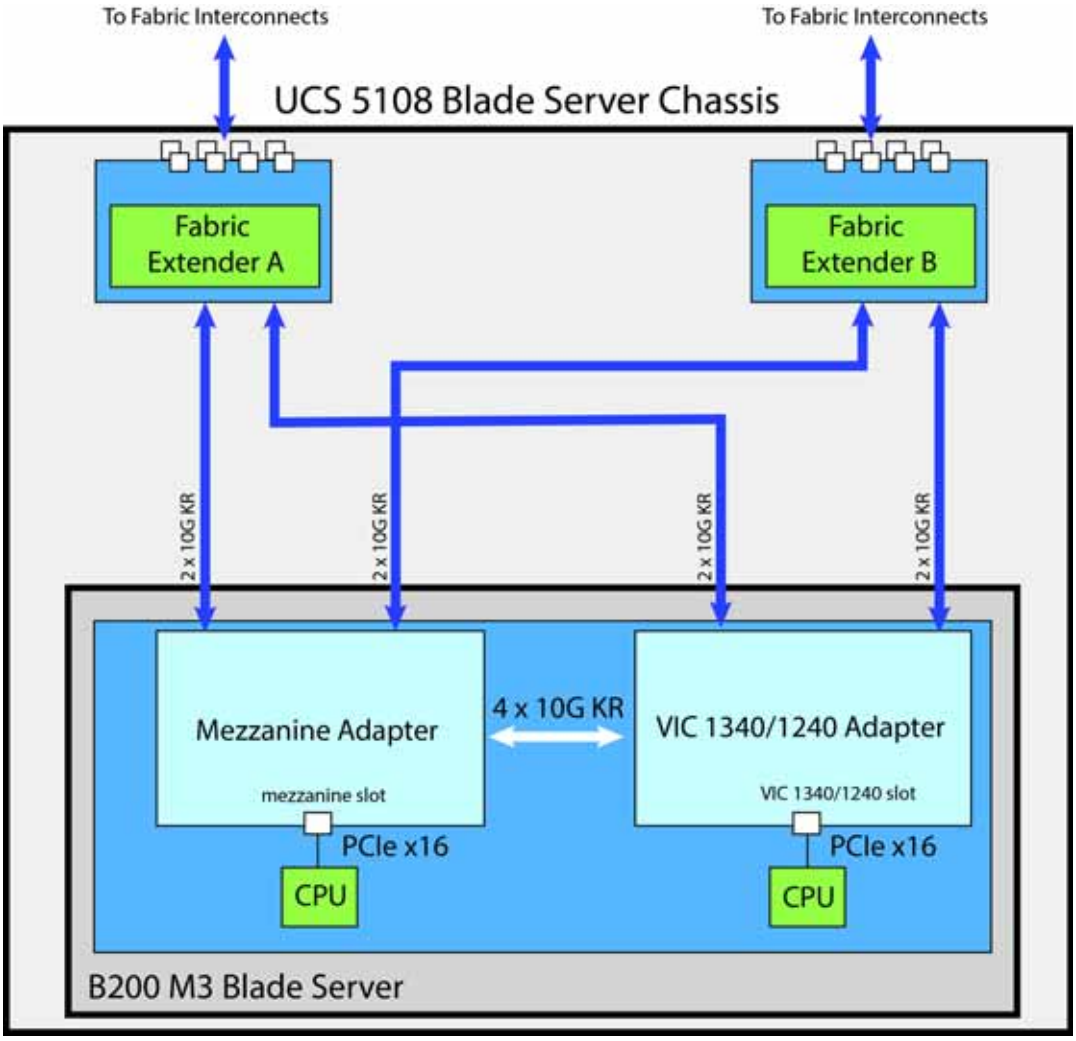
Table 30 B200 M3 NEBS Compliant Components

Component Category	Description	Product ID (PID)
CPUs	Up to two CPUs: Intel Xeon E5-2658v 2 .40 GHz 95W 10C/25MB Cache	UCS-CPU-E52658B
	Up to two CPUs: Intel Xeon E5-2658 2.10 GHz 95W 8C/20MB Cache	UCS-CPU-E5-2658
DIMMs	Up to 24: 8 GB DIMMs 1666MHz	UCS-MR-1X082RY-A
	Up to 24: 16 GB DIMMS 1666MHz	UCS-MR-1X162RY-A
	Up to 24: 8 GB DIMMs 1866MHz	UCS-MR-1X082RZ-A
	Up to 24: 16 GB DIMMS 1866MHz	UCS-MR-1X162RZ-A
RAID Controller	Integrated RAID	—
HDDs	Up to two: 300 GB 15K RPM SAS drives (600GB maximum total capacity)	UCS-HDD300GI2F105
	Up to two: 600 GB 10K RPM SAS drives (1.2 TB maximum total capacity)	A03-D600GA2
Mezzanine Cards	Cisco UCS VIC 1340 adapter for M3 blade servers	UCSB-MLOM-40G-03
	Cisco UCS VIC 1240 adapter for M3 blade servers	UCSB-MLOM-40G-01
	Cisco UCS Port Expander	UCSB-MLOM-PT-01

Network Connectivity

This section explains how the UCS B200 M3 server connects to Fabric Interconnects using the network adapters in the UCS B200 M3 blade server and the Fabric Extender modules in the UCS 5108 blade server chassis. The UCS B200 M3 server plugs into the front of the UCS 5108 blade server chassis. The Fabric Extender modules plug into the back of the UCS 5108 series blade server chassis. A midplane connects the UCS B200 M3 blade server to the Fabric Extenders. ***Figure 8*** shows an example configuration where 2 x 10G KR ports are routed from the VIC 1340 or 1240 adapter to the Fabric Extender modules and the remaining 2 x 10G KR ports are routed from the mezzanine adapter to the Fabric Extender modules.

Figure 8 UCS B200 M3 Connections to the Fabric Extenders



The server accommodates two types of network adapters. One is the Cisco VIC 1340 or 1240 adapter. The other is a Cisco adapter, Emulex or QLogic I/O adapter, or Cisco Storage Accelerator adapter. The VIC 1340/1240 is the only adapter that can be used in the VIC 1340/1240 slot. All other types of adapters plug into the mezzanine slot.

The network adapter options are:

- Cisco VIC 1340 or adapter. This adapter plugs into the VIC 1340/1240 slot and is natively capable of 4x10Gb ports and 256 PCIe devices. The capabilities of the adapter can easily be expanded by using the Port Expander Card in the mezzanine slot.
- Cisco VIC 1380 or 1280 Mezzanine adapter. This adapter plugs into the mezzanine slot and is capable of 4x10Gb ports in the UCS B200 M3 server, depending on the Fabric Extender chosen (see ***Table 11 on page 22***) and 256 PCIe devices.
- Cisco Port Expander Card. This I/O expander plugs into the mezzanine slot and enables full second-generation VIC functionality with the VIC 1340 or 1240. Using the Port Expander Card with the VIC 1340 or 1240 allows you to have 8 ports of 10Gb each (depending on the Fabric Extender option chosen - see ***Table 11 on page 22***).
- QLogic and Emulex adapters
- Cisco Storage Accelerators. These flash storage devices do not have network connectivity; instead they provide independent high-speed storage controlled by CPU 2. See ***Table 9 on page 20*** for descriptions.

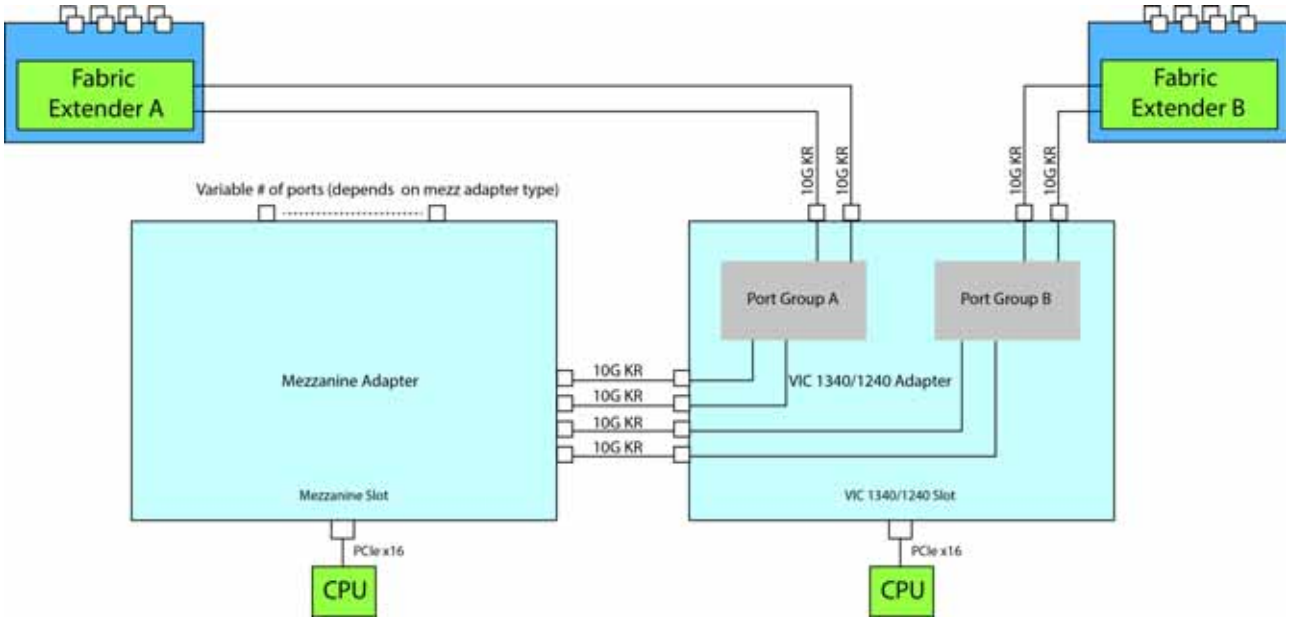
NOTE: The bandwidth/port count on these adapters depends on the Fabric Extender. For example, the VIC 1380 or 1280 only supports up to 4x10Gb in this blade because each mezzanine slot (or VIC 1340 or 1240 slot) only supports up to 4x10Gb.

VIC 1340/1240 Adapter

The only adapter that can be plugged in to the VIC 1340 or 1240 slot is the VIC 1340 or 1240, Cisco-designed PCIe based adapters that provide up to eight (depending on the Fabric Extender option chosen) 10 Gigabit Data Center Ethernet (DCE) network interfaces.

There are two groups of four ports on the VIC 1340 or 1240. Two ports of the first group and two ports of the second group are wired through the UCS 5108 Blade Server chassis to Fabric Extender A and Fabric Extender B. The other two ports of each group are wired to the mezzanine slot, as represented in ***Figure 9***.

Figure 9 VIC 1340/1240 Port Connectivity



The number of ports available at the mezzanine adapter depends on the type of mezzanine adapter that is plugged into the mezzanine slot on the system board. The maximum number of ports is four. The VIC 1340 or 1240 senses the type of adapter plugged into the mezzanine slot. In the event a Port Expander Card occupies the mezzanine slot, the four 10G KR ports between the adapters are used for port expansion; otherwise, they are unused.

Mezzanine Adapters

There are multiple options for the mezzanine slot:

- I/O-based PCIe adapters (such as network adapters), or
- Cisco Storage Accelerator adapters (such as Fusion-io and LSI cache cards)

NOTE: In a B200 M3 configured with 2 CPUs, if a UCS B200 M3 blade server does not have a VIC 1340 or 1240 installed, the mezzanine slot is required to have a QLogic or Emulex I/O adapter installed to provide I/O connectivity. In a B200 M3 configured with 1 CPU, however, a VIC 1340 or 1240 must always be installed.

Specific examples of mezzanine adapters are:

- Cisco adapters
  - VIC 1340
  - VIC 1240
  - VIC 1380
  - VIC 1280
  - Port Expander Card

- Emulex or QLogic I/O adapters
  - Emulex M73KR-E
  - QLogic M73KR-Q
- Cisco Storage Accelerator adapters
  - Cisco UCS 785 GB MLC Fusion-io ioDrive2
  - LSI 400 GB SLC WarpDrive

The following sections explain the various I/O options that are possible with the different Fabric Extenders (Cisco UCS 2208XP, 2204XP, and 2104XP) and the VIC 1340 or 1240 and mezzanine adapters.

B200 M3 Configured with 1 CPU

In a B200 M3 configured with 1 CPU, the mezzanine card slot is not under the control of a CPU (in a B200 M3 configured with 2 CPUs, CPU 2 controls the slot). Therefore, the only adapter that can be placed in the mezzanine slot in a B200 M3 configured with 1 CPU is the Cisco UCS Port Expander Card, and the VIC 1340 or 1240 is always required to be installed in the VIC 1340/1240 slot.

Connectivity using the Cisco UCS 2208XP Fabric Extender

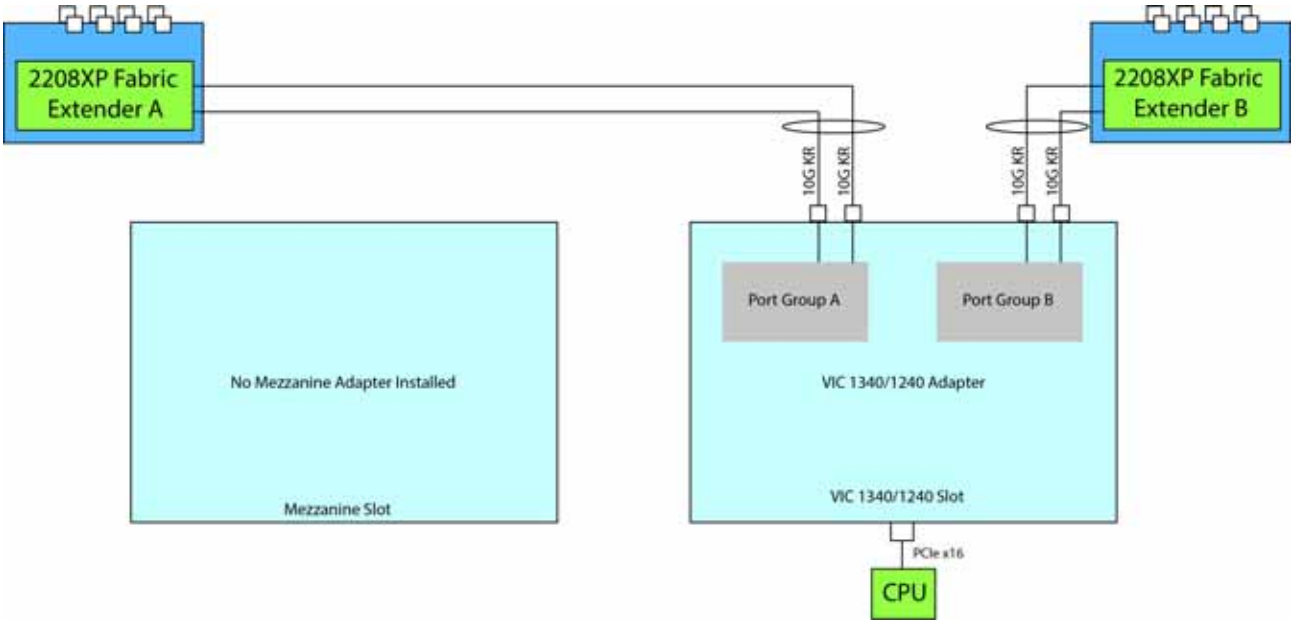
The Cisco UCS 2208XP is the second-generation Fabric Extender, and shares the same form factor as the current UCS 2100 series. The 2208XP is backwards compatible with the UCS 5108 Blade server chassis.

The options shown in ***Figure 10*** and ***Figure 11*** demonstrate how the server uses these options:

- VIC 1340 or 1240 to 2208XP
- VIC 1240 plus Port Expander Card to 2208XP

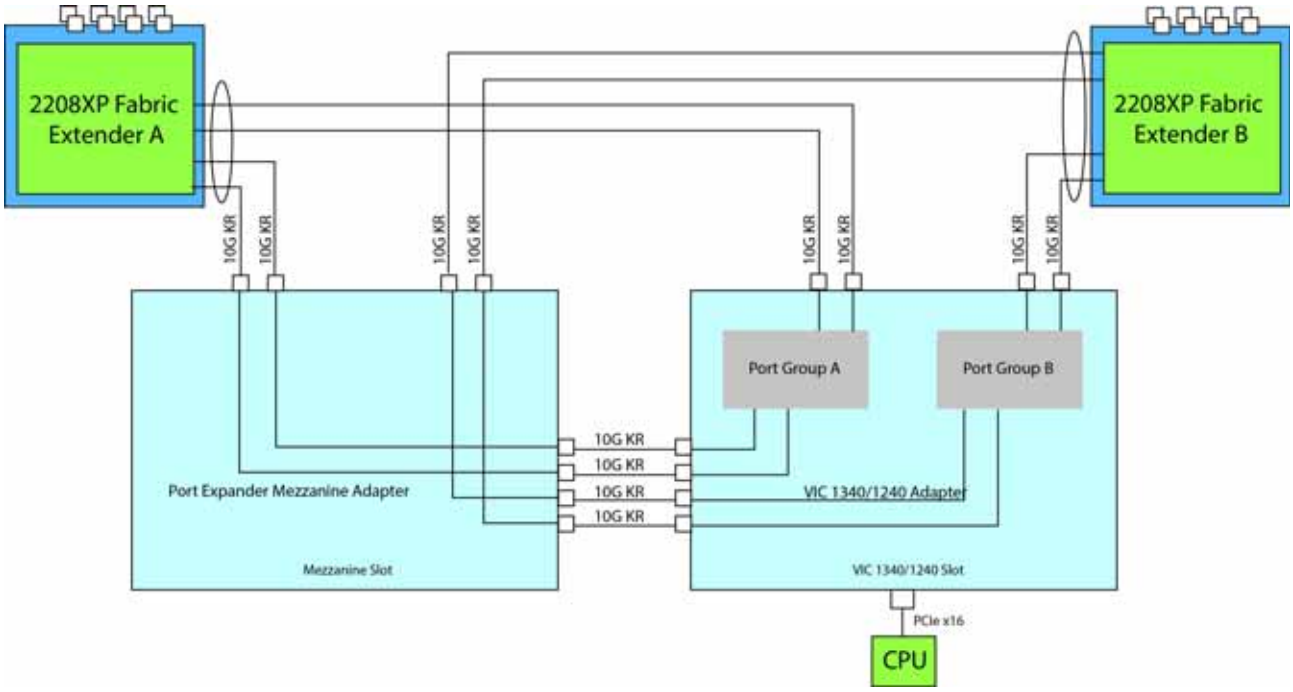
In ***Figure 10***, two ports from the VIC 1340 or 1240 are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 10 Option 1 - VIC 1340/1240 to UCS 2208XP Fabric Extender (no mezzanine adapter)



In ***Figure 11***, two ports from the VIC 1340/1240 are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The Port Expander Card installed in the mezzanine slot acts as a pass-through device to channel two ports to each of the Fabric Extenders. The result is 40 Gbps of bandwidth to each Fabric Extender.

Figure 11 Option 2 - VIC 1340/1240 and Port Expander Card to UCS 2208XP Fabric Extender



Connectivity using the Cisco UCS 2204XP Fabric Extender

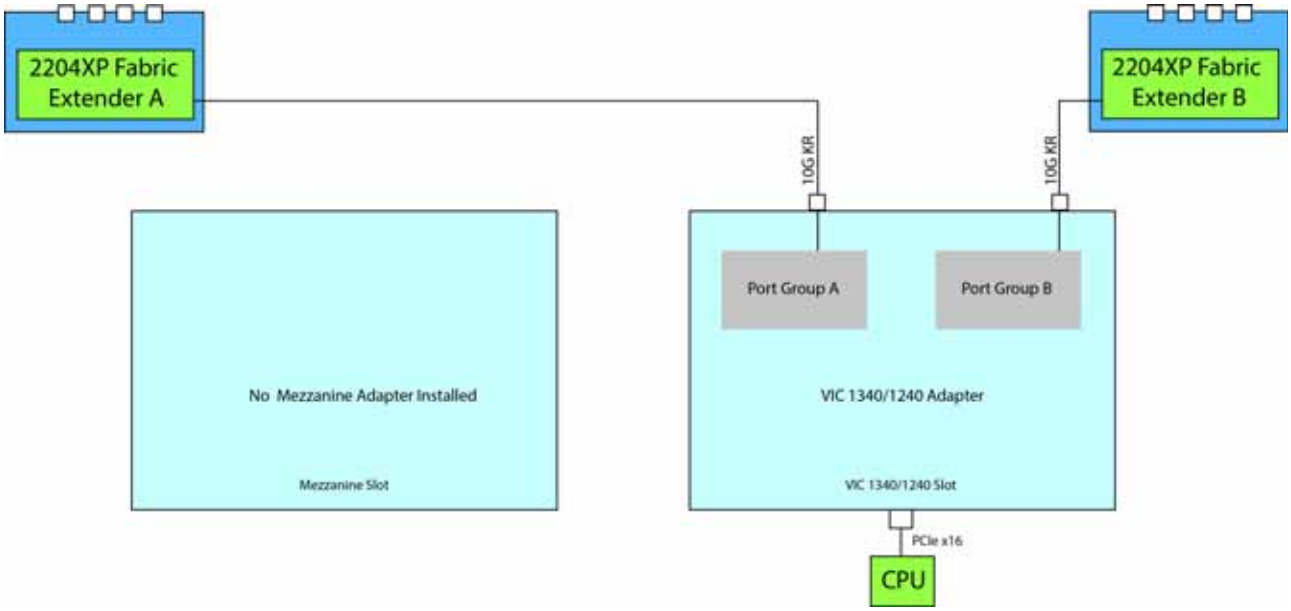
The Cisco UCS 2204XP is a second-generation Fabric Extender, and shares the same form factor as the current UCS 2100 series. The 2204XP is backwards compatible with the UCS 5108 Blade serve chassis.

The options shown in ***Figure 12*** and ***Figure 13*** demonstrate how the server uses these options:

- VIC 1340/1240 to 2204XP
- VIC 1340/1240 plus Port Expander Card to 2204XP

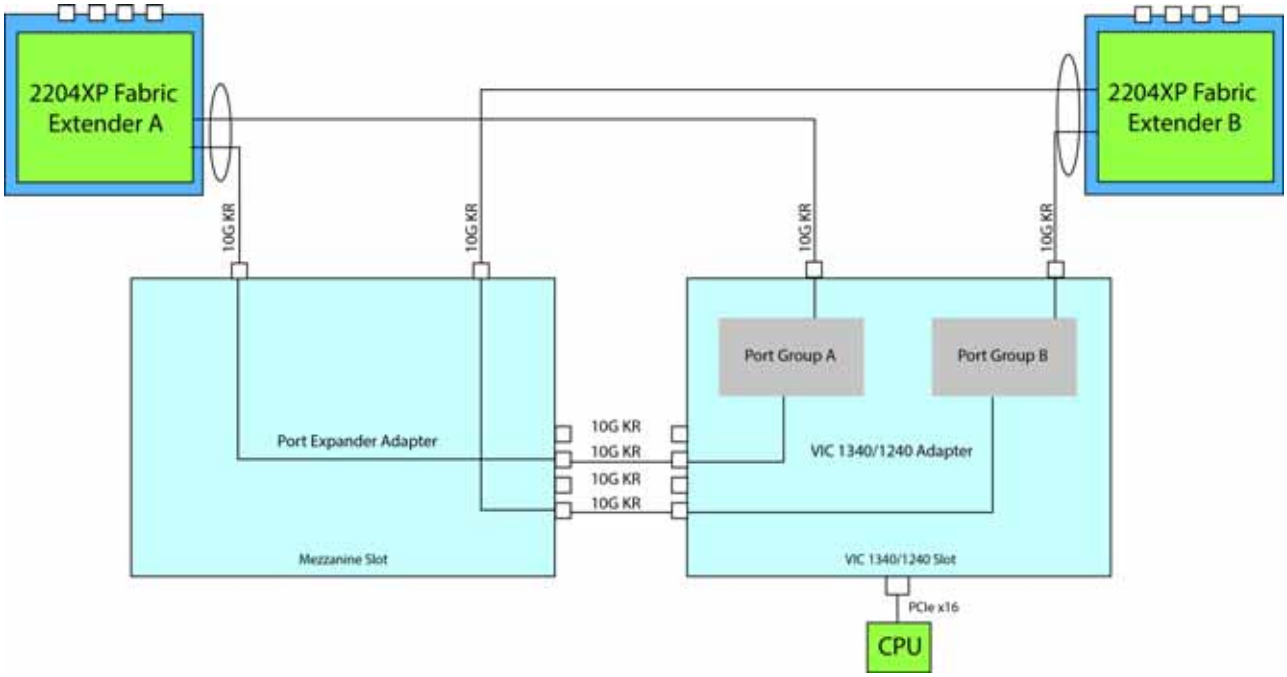
In ***Figure 12***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The result is 10 Gbps of bandwidth to each Fabric Extender.

Figure 12 Option 1 - VIC 1340/1240 to UCS 2204XP Fabric Extender (no mezzanine adapter)



In ***Figure 13***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The Port Expander Card installed in the mezzanine slot acts as a pass-through device to channel one port to each of the Fabric Extenders. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 13 Option 2 - VIC 1340/1240 and Port Expander Card to UCS 2204XP Fabric Extender

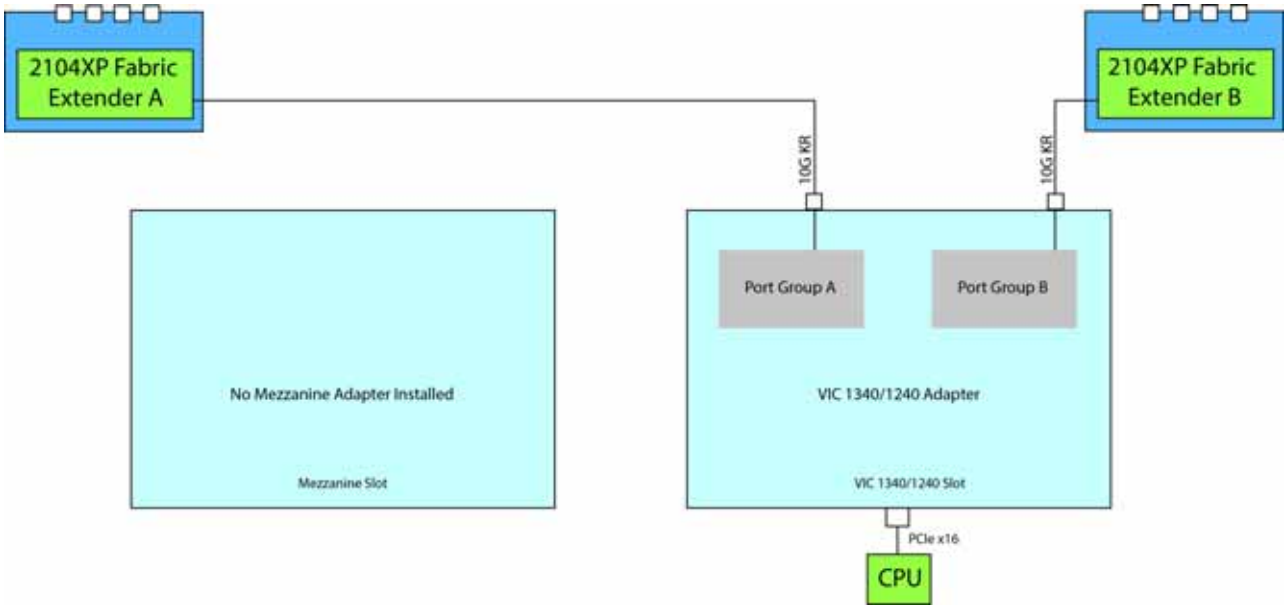


Connectivity using the Cisco UCS 2104XP Fabric Extender

The option shown in ***Figure 14*** demonstrates how the UCS B200 M3 blade serves connects to a UCS 2104XP Fabric Extender.

In ***Figure 14***, one port from the VIC 1340/1240 is channeled to 2104XP Fabric Extender A and one is channeled to 2104XP Fabric Extender B. The result is 10 Gbps of bandwidth to each Fabric Extender.

Figure 14 Option 1 - VIC 1340/1240 to UCS 2104XP Fabric Extender (no mezzanine adapter)



B200 M3 Configured with 2 CPUs

Connectivity using the Cisco UCS 2208XP Fabric Extender

The Cisco UCS 2208XP is the second-generation Fabric Extender, and shares the same form factor as the current UCS 2100 series. The 2208XP is backwards compatible with the UCS 5108 Blade serve chassis.

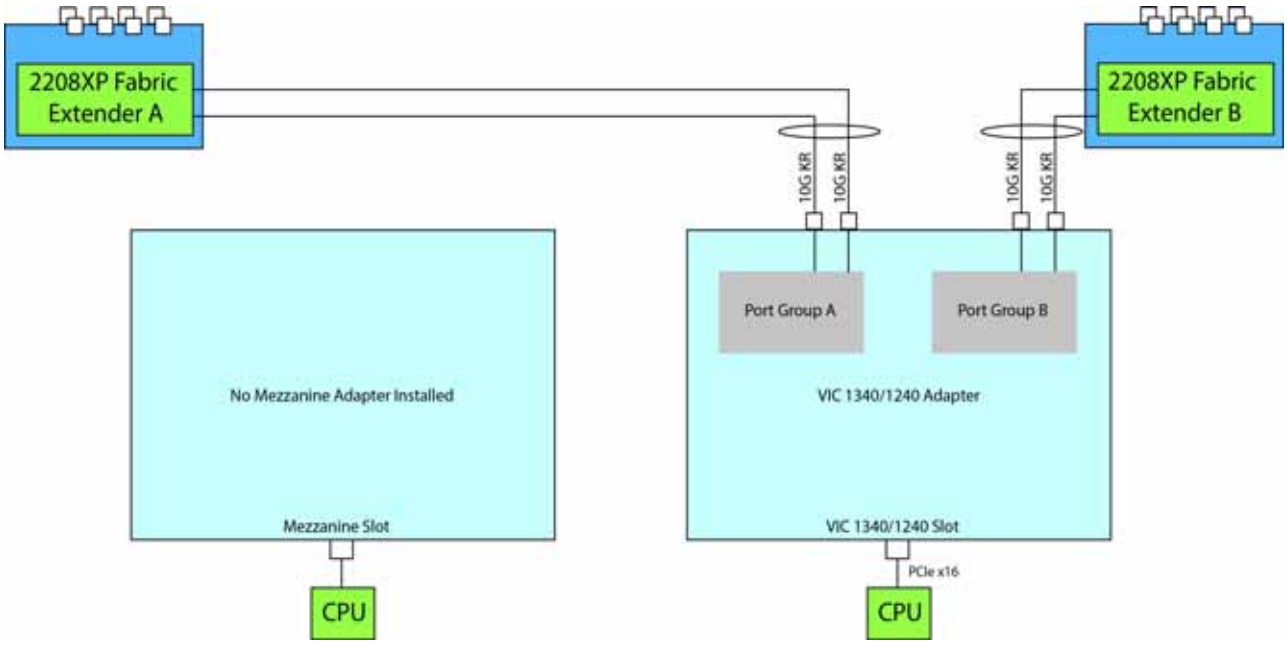
The options shown in ***Figure 15*** through ***Figure 19*** demonstrate how the server uses these options:

- VIC 1340/1240 to 2208XP
- VIC 1340/1240 and VIC 1380/1280 to 2208XP
- VIC 1340/1240 and QLogic or Emulex I/O adapter to 2208XP
- VIC 1340/1240 plus Port Expander Card to 2208XP
- QLogic or Emulex I/O adapter to 2208XP

NOTE: A Cisco Storage Accelerator adapter may also be plugged into the mezzanine adapter. There is no network connectivity for this kind of adapter; instead it provides high-speed storage to the system and is controlled by CPU 2.

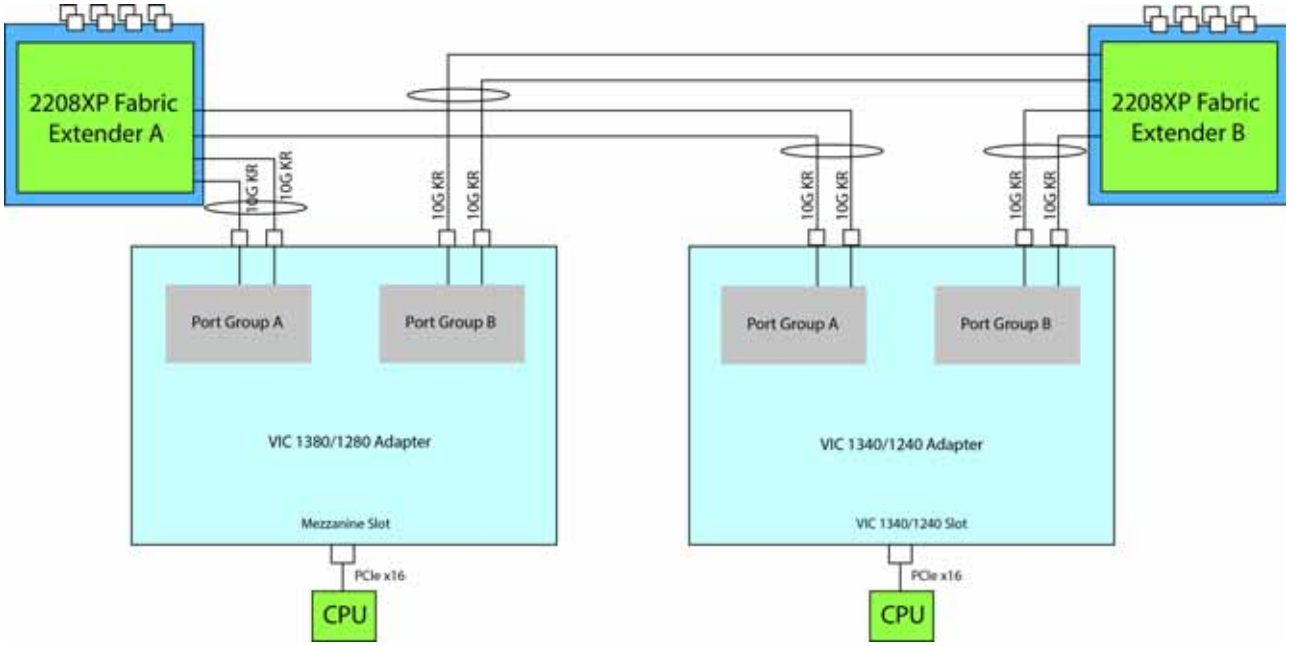
In ***Figure 15***, two ports from the VIC 1340/1240are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 15 Option 1 - VIC 1340/1240 to UCS 2208XP Fabric Extender (no mezzanine adapter)



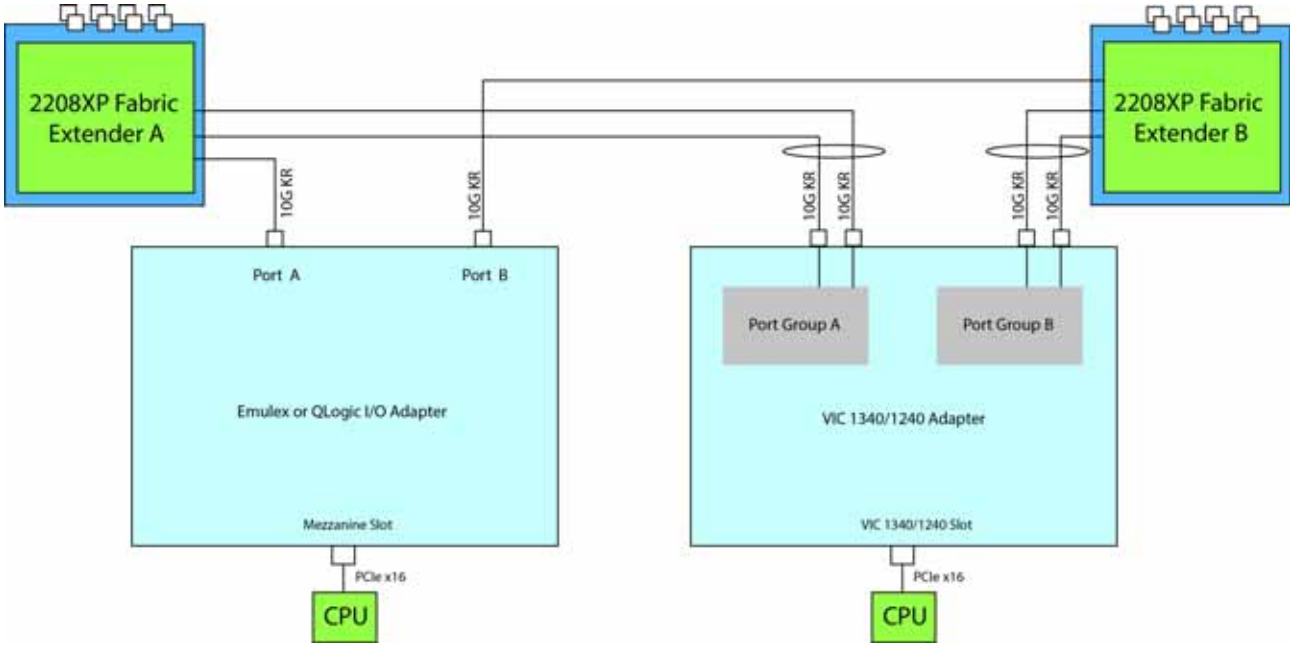
In ***Figure 16***, two ports from the VIC 1340/1240 are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The VIC 1380/1280 installed in the mezzanine slot also channels two ports to each of the Fabric Extenders. The result is 40 Gbps of bandwidth to each Fabric Extender.

Figure 16 Option 2 - VIC 1340/1240 and VIC 1380/1280 to UCS 2208XP Fabric Extender



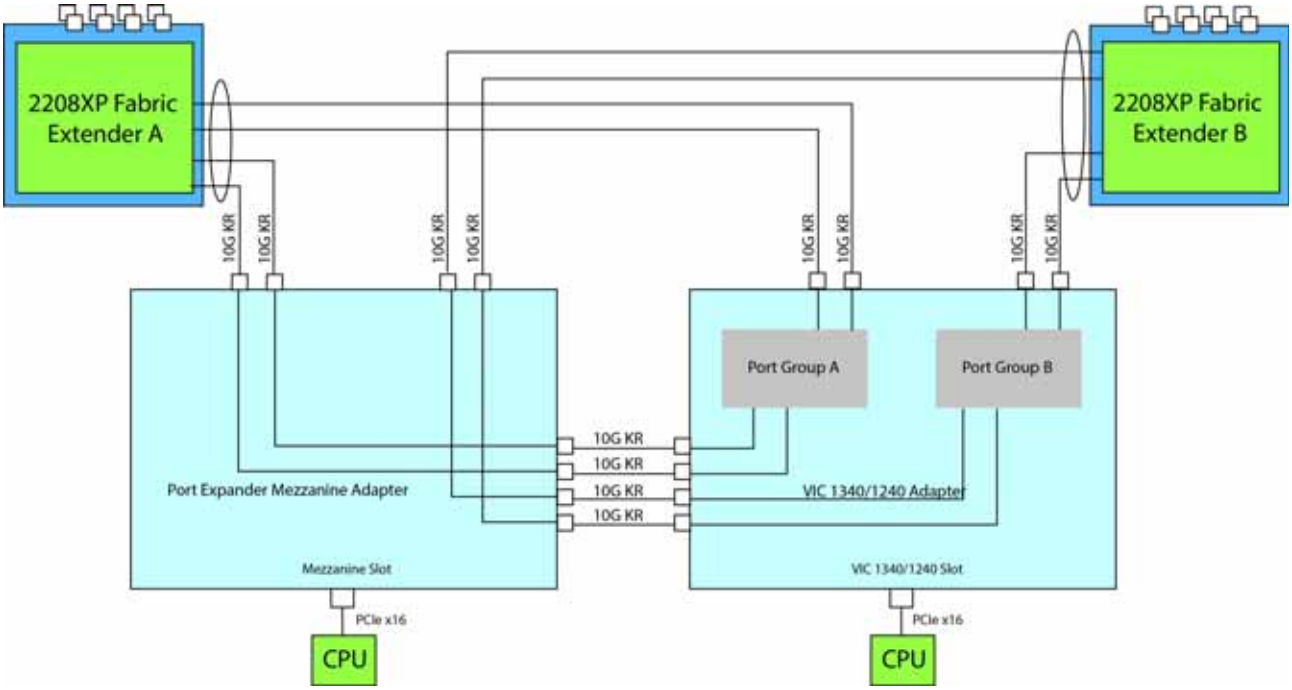
In ***Figure 17***, two ports from the VIC 1340/1240 are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The adapter installed in the mezzanine slot also channels one port to each of the Fabric Extenders. The result is 30 Gbps of bandwidth to each Fabric Extender.

Figure 17 Option 3 - VIC 1340/1240 and Emulex or QLogic I/O Adapter to UCS 2208XP Fabric Extender



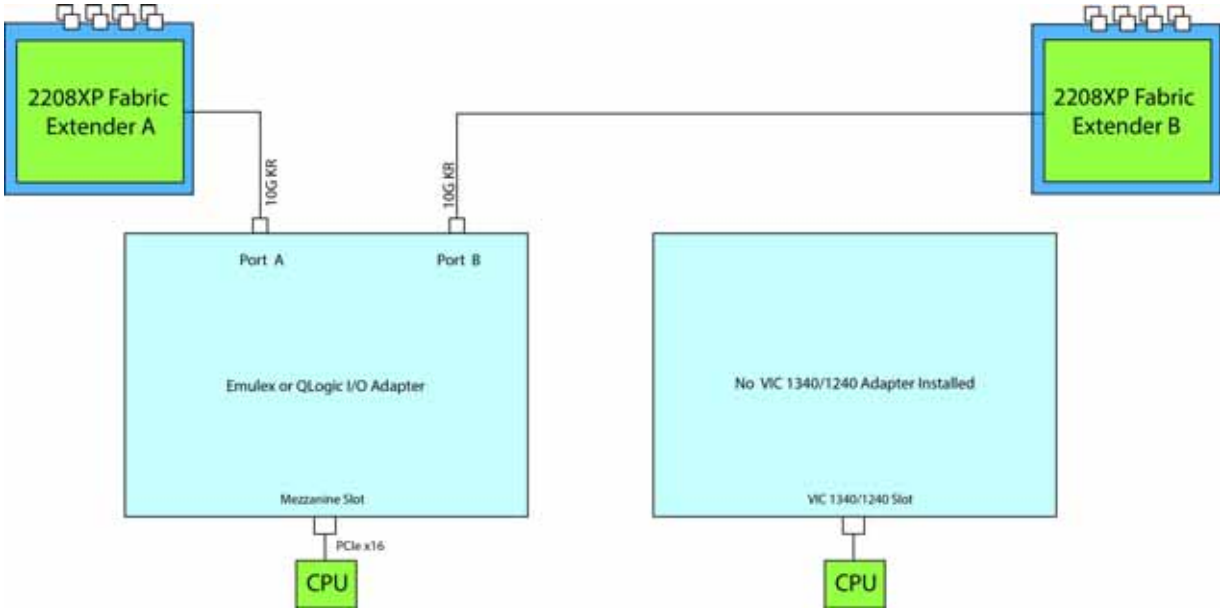
In ***Figure 18***, two ports from the VIC 1340/1240are channeled to 2208XP Fabric Extender A and two are channeled to 2208XP Fabric Extender B. The Port Expander Card installed in the mezzanine slot acts as a pass-through device to channel two ports to each of the Fabric Extenders. The result is 40 Gbps of bandwidth to each Fabric Extender.

Figure 18 Option 4 - VIC 1340/1240 and Port Expander Card to UCS 2208XP Fabric Extender



In ***Figure 19***, there is no VIC 1340/1240 adapter installed. In this case, a network adapter must be installed in the mezzanine slot. Port A and B of the mezzanine adapter connect to the Fabric Extenders, providing 10 Gbps per port.

Figure 19 Option 5 - Emulex/QLogic I/O Adapter to UCS 2208XP Fabric Extender (no VIC 1340/1240 adapter)



Connectivity using the Cisco UCS 2204XP Fabric Extender

The Cisco UCS 2204XP is a second-generation Fabric Extender, and shares the same form factor as the current UCS 2100 series. The 2204XP is backwards compatible with the UCS 5108 Blade serve chassis.

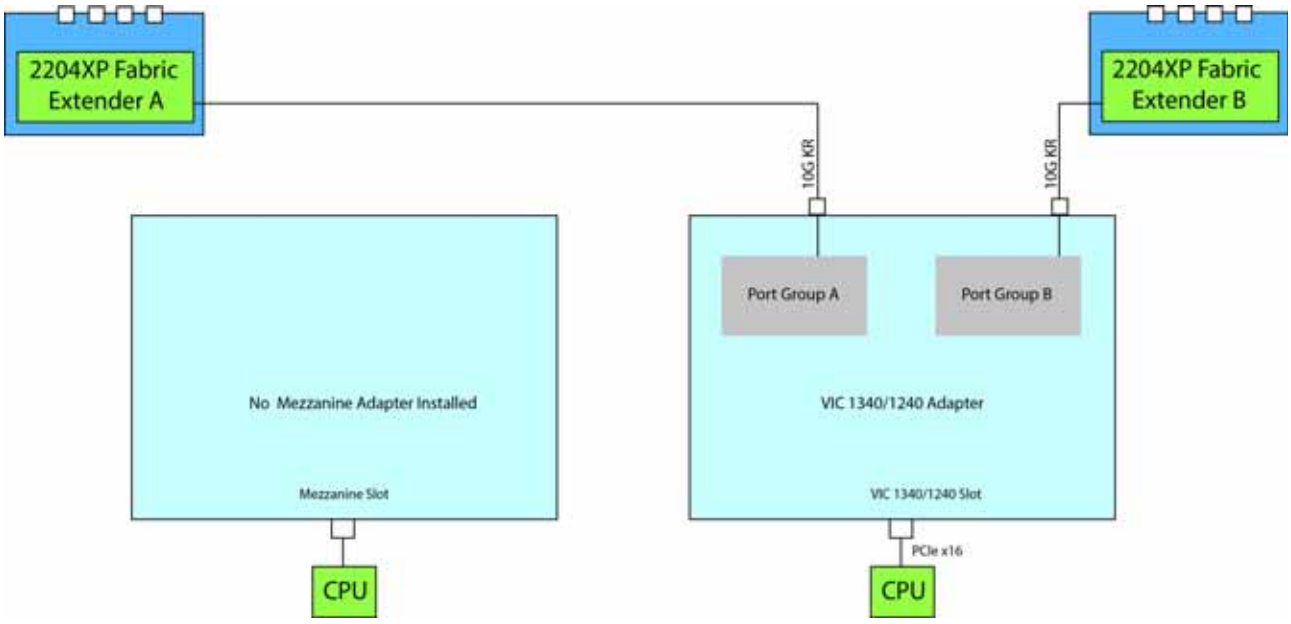
The options shown in ***Figure 20*** through ***Figure 24*** demonstrate how the server uses these options:

- VIC 1340/1240 to 2204XP
- VIC 1340/1240 and VIC 1380/1280 to 2204XP
- VIC 1340/1240 and Cisco, QLogic, or Emulex I/O adapter to 2204XP
- VIC 1340/1240 plus Port Expander Card to 2204XP
- QLogic or Emulex I/O adapter to 2204XP

NOTE: A Cisco Storage Accelerator adapter may also be plugged into the mezzanine adapter. There is no network connectivity for this kind of adapter; instead it provides high-speed storage to the system and is controlled by CPU 2.

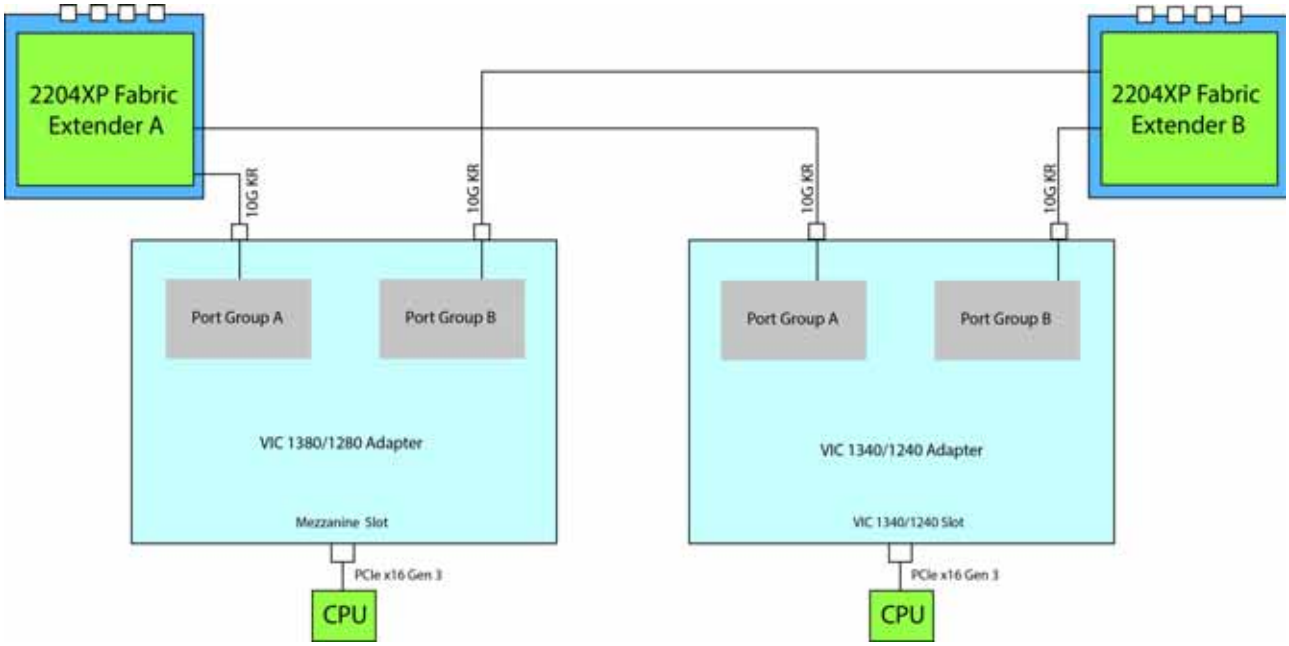
In ***Figure 20***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The result is 10 Gbps of bandwidth to each Fabric Extender.

Figure 20 Option 1 - VIC 1340/1240 to UCS 2204XP Fabric Extender (no mezzanine adapter)



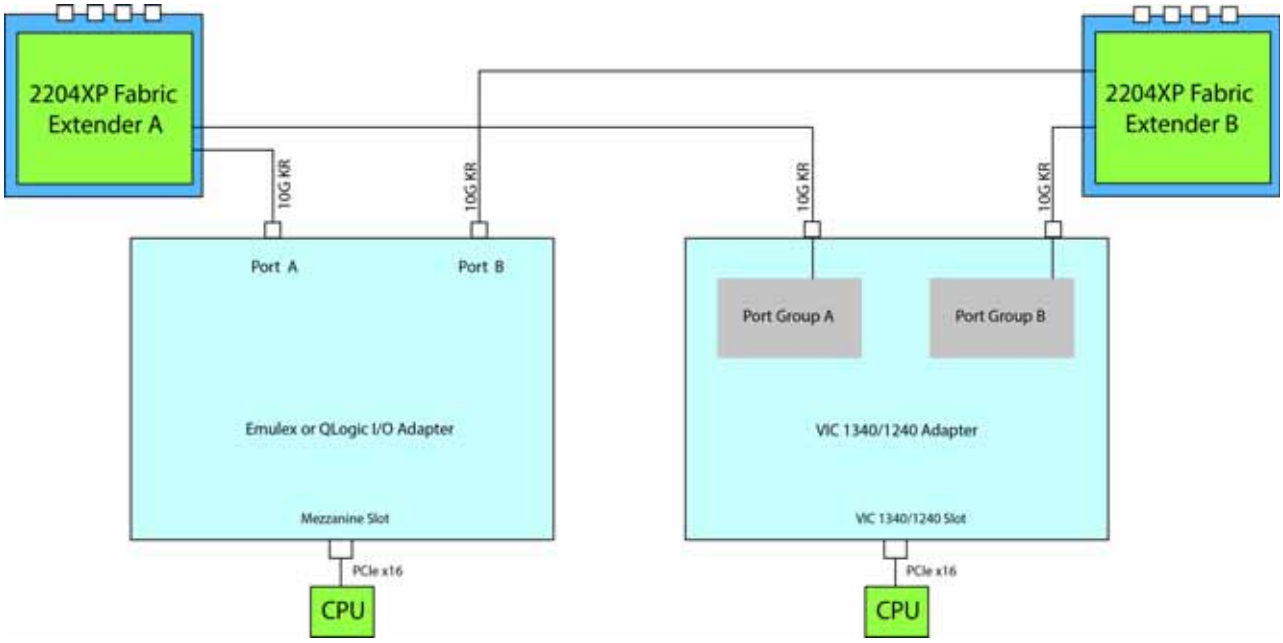
In ***Figure 21***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The VIC 1380/1280 installed in the mezzanine slot also channels one port to each of the Fabric Extenders. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 21 Option 2 - VIC 1340/1240 and VIC 1380/1280 to UCS 2204XP Fabric Extender



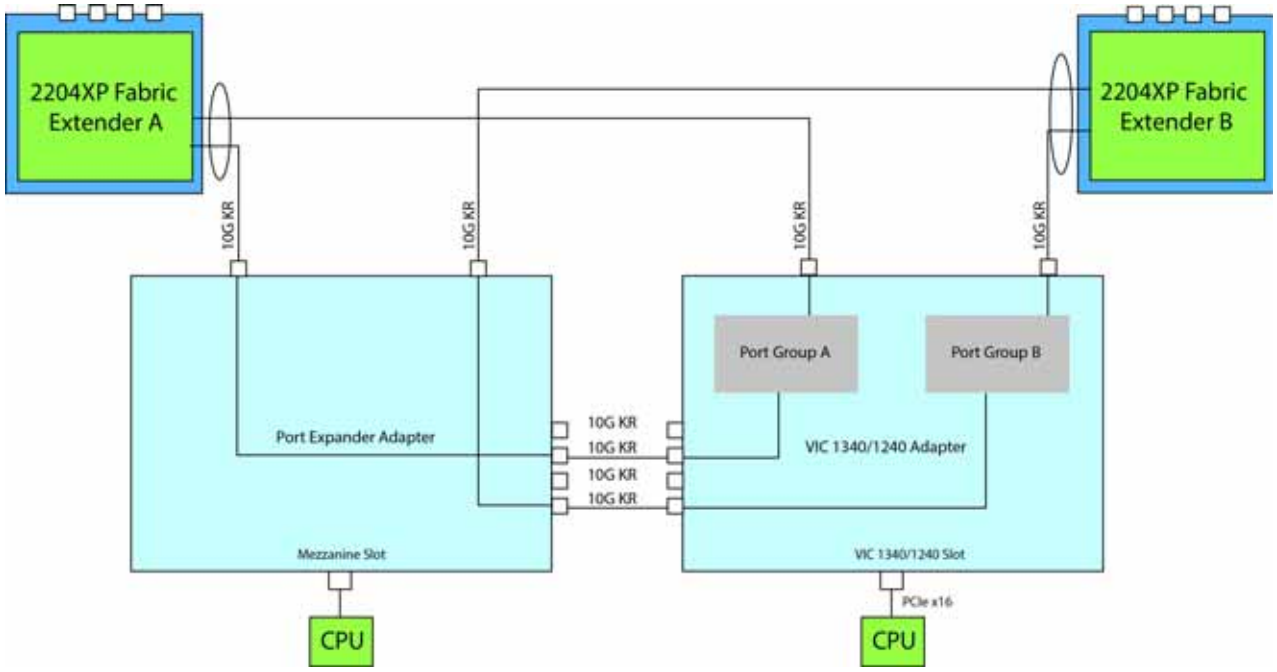
In ***Figure 22***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The adapter installed in the mezzanine slot also channels one port to each of the Fabric Extenders. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 22 Option 3 - VIC 1340/1240 and Emulex/QLogic I/O Adapter to UCS 2204XP Fabric Extender



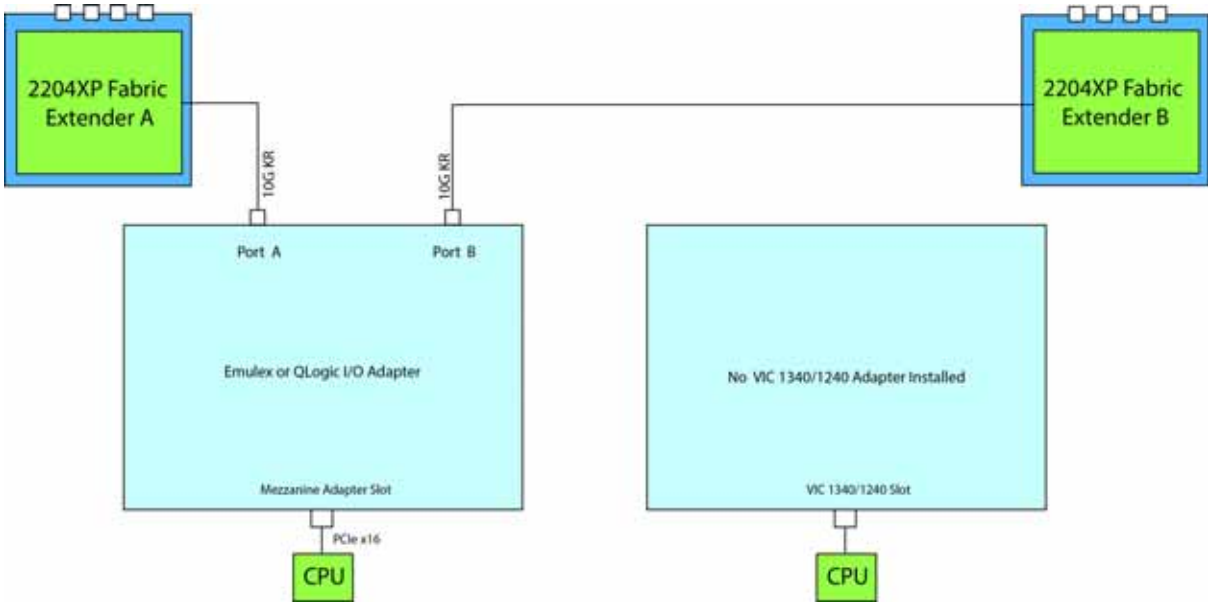
In ***Figure 23***, one port from the VIC 1340/1240 is channeled to 2204XP Fabric Extender A and one is channeled to 2204XP Fabric Extender B. The Port Expander Card installed in the mezzanine slot acts as a pass-through device to channel one port to each of the Fabric Extenders. The result is 20 Gbps of bandwidth to each Fabric Extender.

Figure 23 Option 4 - VIC 1340/1240 and Port Expander Card to UCS 2204XP Fabric Extender



In ***Figure 24***, there is no VIC 1340/1240 adapter installed. In this case, a network adapter must be installed in the mezzanine slot. Port A and B of the mezzanine adapter connect to the Fabric Extenders, providing 10 Gbps per port.

Figure 24 Option 5 - Emulex/QLogic I/O Adapter to UCS 2204XP Fabric Extender (no VIC 1340/1240 adapter)

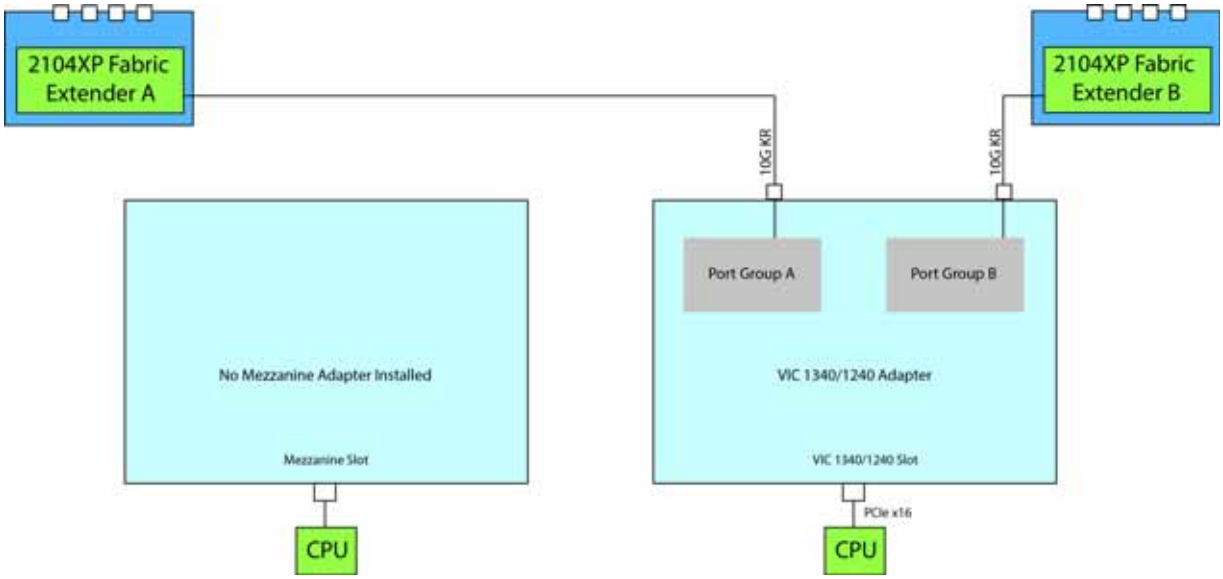


Connectivity using the Cisco UCS 2104XP Fabric Extender

The options shown in ***Figure 25*** and ***Figure 26*** demonstrate how the UCS B200 M3 blade server connects to a UCS 2104XP Fabric Extender. With this option, the mezzanine connector can either be empty or contain an independent Cisco Storage Accelerator adapter that communicates with CPU 2 through the PCIe bus.

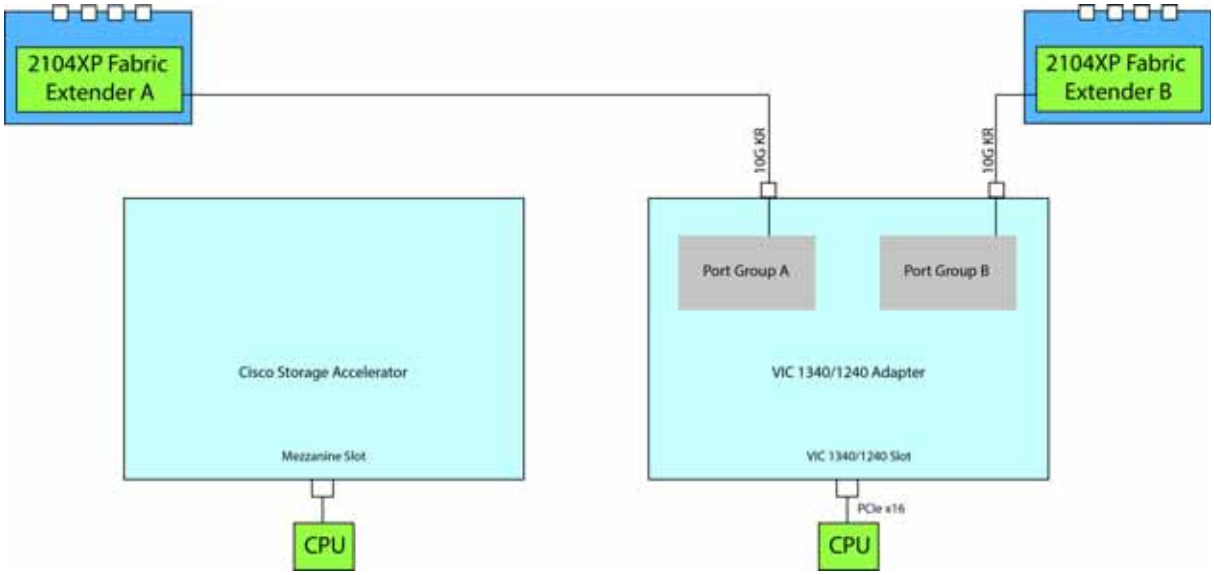
In ***Figure 25***, one port from the VIC 1340/1240 is channeled to 2104XP Fabric Extender A and one is channeled to 2104XP Fabric Extender B. The result is 10 Gbps of bandwidth to each Fabric Extender. With this option, no adapter is located in the mezzanine connector.

Figure 25 Option 1 - VIC 1340/1240 to UCS 2104XP Fabric Extender (no mezzanine adapter)



In ***Figure 26***, one port from the VIC 1340/1240 is channeled to 2104XP Fabric Extender A and one is channeled to 2104XP Fabric Extender B. The result is 10 Gbps of bandwidth to each Fabric Extender. The Cisco Storage Accelerator adapter is located in the mezzanine connector as an independent device controlled by CPU 2.

Figure 26 Option 2 - VIC 1340/1240 to UCS 2104XP Fabric Extender (Cisco Storage Accelerator installed)



TECHNICAL SPECIFICATIONS

Dimensions and Weight

Table 31 UCS B200 M3 Dimensions and Weight

Parameter	Value
Height	1.95 in. (50 mm)
Width	8.00 in.(203 mm)
Depth	24.4 in. (620 mm)
Weight	■ Base server weight (no CPUs, no HDDs, no mezzanine adapters or memory) = 9.62 lbs (4.36 kg) ■ Minimally configured server (1 HDD, 2 CPUs, a VIC 1340/1240 but no mezzanine adapter) = 12.50 lbs (5.67 kg) ■ Fully configured server (2 HDDs, 2 CPUs, all memory, VIC 1340/1240 and mezzanine adapter both populated) = 14.98 lbs (6.79 kg)

Power Specifications

For configuration-specific power specifications, use the Cisco UCS Power Calculator at:

https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx

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